UNITED STATES PATENT AND TRADEMARK OFFICE
Board of Patent Appeals and Interferences
Case Number: Redacted by Examiner Palabrica

For: METHOD TO CONTROL REACTIONS INVOLVING ISOTOPIC FUEL WITHIN A MATERIAL USING ORTHOGONAL ELECTRIC-FIELDS

Serial no. 09/ 748,691
Filed: 12/26/2000
This is a division of Serial no. 07/ 760,970
Filed: 09/17/1991

Group Art Unit: 3641
Examiner: Palabrica, R.J.

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pro se APPELLANT'S REPLY BRIEF

1. This is the *pro se* Appellant's Reply Brief. It responds to the Examiners' Brief which is dated July 29, 2011 (cover as Exhibit "A", also called herein "Office's Brief").

2. The *pro se* Appellant thanks the Examiners (Dr. Palabrica now joined by Dr. Johannes Mondt) for finally sending *pro se* Appellant's Appeal Brief to the Board. The *pro se* Appellant notes that there have been three (3) Appeal Briefs demanded by the Examiner. These additional versions were unfairly demanded from the *pro se* Appellant. The Board is directed to Appellant's Notice to the Board, January 28, 2004 and Appellant's Notice to the Board, November 24, 2003. Copies are appended, and hopefully the Board will have the advantage of the final Appeal Brief, filed Jan. 28, 2004.

3. The *pro se* Appellant is disappointed that the Office's Brief again fails to correctly describe the invention or the record with accuracy.

4. The *pro se* Appellant is very disappointed that the Office's Brief again fails to address the Appellant's (then Applicant's) arguments, again misstating them.

5. The *pro se* Appellant is extremely disappointed that the Office's Brief has again failed to cite the Applicant's submitted Evidence, and has utterly failed to respond to them.

6. The *pro se* Appellant is astonished that the Office's Brief has unfairly added new material.

7. The *pro se* Applicant remains disappointed that the Examiner and Office have previously removed important submitted Evidence, that should have been before the Board. This was only revealed after the case left the Board of Patent Appeals; and that the Examiner Palabrica has attempted to obstruct justice by keeping the Appeal Briefs describing these actions from the Board.

8. In this Response, the *pro se* Appellant will address fully, and rebut with substantial Evidence, the faulty, fabricated, disingenuous" Arguments", including the new ones purported by the Examiner.

9. In the discussion below, reference is also made to previous relevant Declarations, letters and affidavits, copies of which are attached. These are relevant and important because they show that the Applicant was correct at the time of the above-entitled application and to operability and utility of the present invention.

10. In the discussion below, reference is made to several Declarations. They have probative value, are relevant to demonstrate the operability and utility of the above-entitled application and one of the fields in which it does operate.

11. In the Bass declaration, the Declarant is shown to be qualified as an expert with respect to the subject matter of the field in which the above-entitled invention does operate and the normal lawful mode in which the U.S. Patent Office should operate.

In the Chubb Amicus Curiae Brief, the Declarant is shown to be qualified as an expert with respect to electromagnetic energy and energy studies. Dr. Talbot Chubb (Ph.D., AB) served for 31 years at the Naval Research Laboratory.

In the Fox declaration and Amicus Curiae Brief, the Declarant is shown to be qualified as an expert with respect to the subject matter of that issue which has been brought up by the Office. Dr Fox, PhD, MBA, is an engineer with experience in energy and other fields for more than thirty (30) years, and has published extensively in this scientific field.

In the Mallove declarations and Amicus Curiae Brief, the late Dr. Mallove was shown to be qualified as an expert with respect to the subject matter of the field in which the above-entitled invention does operate. Dr. Mallove (ScD Harvard, BS MIT) was a world-renowned author in this field and the former Senior Science Writer in the Press Office for the Massachusetts Institute of Technology (Cambridge, MA) at the MIT News Office during the DOE ERAB report in 1989 to which the Office wrongly refers, with a history of work at Hughes Research Laboratories, TASC (The Analytic Science Corporation), MIT Lincoln Laboratory, and the Voice of America [Washington, DC].

In the McKubre Amicus Curiae Brief, the Declarant is shown to be qualified as an expert with respect to metal-hydrogen systems, storage of hydrogen in metals, and the measurement of hydrogen loading. Dr. Mc Kubre (Ph.D., Victoria University of Wellington, New Zealand; M.Sc.] has served at SRI International since 1979, most recently as its Director of the Energy Research Center, Pure and Applied Physical Sciences Division.

In the Rotegard Declaration and Amicus Curiae Brief, the Declarant is shown to be qualified as an expert with respect to the potential economics associated with the utility of the field in which the above-entitled invention does operate.

In the Storms Amicus Curiae Brief, the Declarant is shown to be qualified as an expert with respect to nuclear power production. Dr Storms, Ph.D. M.S., served for 34 years at the Los Alamos National Laboratory.

In the Straus Declaration, the Declarant is shown to be qualified as an expert with respect to the interactions of magnetic and electric fields, and electric charges and currents with materials. Mr. Straus [BSEE MIT, Registered Professional Engineer] is an internationally recognized expert in the area of electromagnetic compatibility.

In the Swartz Declaration, the Declarant is shown to be qualified as an expert with respect to electrical engineering, material science, electrophysics, electrochemistry, nuclear physics, surgery, medicine, and radiation oncology. Dr. Swartz (ScD, MSEE, EE, MIT; MD, Harvard) has worked at the Massachusetts Institute of Technology and Massachusetts General Hospital since late 1960's, including in the MIT Laboratory for Insulation Research.

In the Hagelstein Declaration, the Declarant is shown to be qualified as an expert with respect to electrical engineering, nuclear physics, quantum optics including work at the Massachusetts Institute of Technology.

In the Valone Declaration and Amicus Curiae Brief, the Declarant is shown to be qualified as an expert with respect to the subject matter of the field in which the above-entitled invention does operate and in the normal lawful mode in which the U.S. Patent Office should operate. Mr. Valone [M.A., P.E.] has years of experience at the U. S. Patent and Trademark Office in Art Unit 2858 (measuring, testing, instrumentation, and physics).

In the Verner declaration and in previous Declarations before this Group Art, the Declarant is, and has been shown, to be qualified as an expert in the issues and matters of which she reports.

12. These Declarations are relevant, important, and required because they show that the Applicant was correct at the time of the above-entitled application and the operability and utility of the present invention. They are also relevant, important, and required because they demonstrate cruel discrimination and systematic disingenuity by the US Patent Office against the Applicant -- and others in this field.

13. These Declarations are relevant, important, and required because many of these Declarations were previously withheld from the Board of Patent Appeals in and their sequestration (obstruction of justice and discrimination under color of law, for reasons unclear at the moment) only were revealed during discovery in the federal appellate court and SCOTUS, as will be discussed below.

14. The Office's Brief disingenuously states:

"(2) Related Appeals and Interferences - The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

o In re Swartz No. 00-1108, 56 USPQ2d 1703 (decided November 2000) - Swartz patent application S/N 07/760,970.

o In re Swartz No. 00-1107, (decided November 2000) - Swartz patent application S/N 07/371,937.

o Appeal 2009-001853, decide November 2010 - Swartz patent application 10/646,143. "

The *pro se* Appellant is disappointed that the Office's Brief has again failed to accurately cite the other of Appellant's cases before the Board. The Examiners are misleading the Board of Patent Appeals despite knowledge of the other cases (confer Exhibit "B"). Appellant's other cases presently and previously before the Board directly affect and are directly affected by or have a bearing on the Board's decision in the pending appeal. They are not listed in the Examiner's Brief. The concept of loading of hydrogen in metals, in the heat generated, in the measurement of said loading, and in several of Appellant's inventions associated with that subject matter in the following.

Appeal No. 98-2593 regarding the specification and claims of application serial number 08-406,457

Appeal No. 97-3208 regarding the specification and claims of application serial number 07-339,976

Appeal No. 94-2921 regarding the specification and claims of application serial number 07-371,937

Appeal No. 94-2920 regarding the specification and claims of application serial number 07-760,970

Appeal No. 2009-1853 regarding the specification and claims of application serial number 10/646,143.

Appeal No. 03- number not known regarding the specification and claims of application serial number 09-748,695, Continuatiion of '970

The reason the Examiners are misleading the Board is likely that the Appeal Briefs have been withheld by the Examiner(s) who are exposed having also removed Evidence from those file folders in cases which were before the Boaqrd of Patent Appeals (*vide infra*).

ARGUMENTS REGARDING REJECTIONS

ARGUMENTS RE: 35 USC §112 first paragraph REJECTION

15. The Office states,

"Claims 1-5, 7, 9-15, 17, 19 and 20-24 are rejected under 35 U.S.C. 112, first paragraph' for the reasons given in ... section 6 above."

THE TRUTH - THE PURPORTED REASONS DO NOT RELATE TO THE PRESENT APPLICATION

The Examiner is entitled to his opinion but not to mischaracterizing the facts (confer Exhibit "G" and "H"). The Examiner is wrong in this 35 U.S.C.§112,¶1 rejection for any of several reasons. The Examiner's objection is flawed, not accurate, not relevant, and there are several problems with the Examiner's arguments (vide infra). In place of a cogent step-by-step substantive response, the Office handwaves to non-existent "reasons" and brazenly presents NEW arguments after FINAL, some of which are deeply flawed and simply wrong for several reasons involving accuracy, quality, and relevance. Each of these points will now be addressed. For each rejection under 35 U.S.C. 112, first paragraph (and the rest of the Examiner's rejections), the Applicant and the response below supplied by the Declarants fully and completely specify the errors in the rejection.

16. The Appellant below does fully and completely specify the many errors in the rejection, including how Appellant (then Applicant) timely provided evidence surmounting the Examiner's incorrect arguments, and how the Examiner is violating the normal standards of review to continue his systematic discrimination and Applicant-opposed dissection of the above-entitled invention. As such, the errors of the Office can be divided into three groups. First are those errors of the Office that involve the invention itself. Second are those errors of the Office which involve the art to which the Office does refer. Third, the Appellant will discuss, those errors of the Office which involve the Office deviating from the standards of review to continue its systematic discrimination against the pro se Appellant (then Applicant). In fact, as a result of ignoring his systematically ignoring submitted Evidence, the Examiner repeats again several general errors of fact, this time compounded into scientific errors and ethical errors (adding new material, for example). The general errors and the scientific errors are addressed in detail below, and again rebutted with specificity.

Fact 1 - The Specification of '691 Teaches and Claims an Operable Apparatus and a Method Compliant with 35 U.S.C. §112 First Paragraph.

17. The subject matter of the invention at issue in this case, '691, is derived as a Divisional from Applicant's invention '970, which was inappropriately, and mercilessly, dissected by Examiner Palabrica under protest by Applicant The Examiner has sequestered the Appeal Briefs in '765 to prevent Appeal of this issue (and exposure of other matters, *vide infra*).

18. The above-entitled patent application is a Division forced by the Examiner against protest. In Serial no. 09/ 750,765 , a continuation of Serial no. 07/ 760,970, on September 4, 2003 the Applicant filed a notice of appeal about this issue. This most important issue is that Mr. Palabrica has been demanding double patenting (and five), with five times the application fees, and five times the Appeal fees, and he has never released a single Appeal Brief until this time. S.N.07/760,970 [now as Continuation '765, where the Appeal Briefs are sequestered by the Examiner since they expose his wrongful, cruel, unlawful behavior including removal of Evidence] involves a two-stage process involving loading of hydrogen into a metal electrode such as palladium. Applicant taught using a first stage of electrode loading, followed by, a second stage of sudden rapid ("catastrophic") flow of the loaded hydrogen within the metal. Applicant taught in the original specification and claims how this apparatus works and presented objective detailed evidence of the invention. The first stage is the electrode loading, and then, in the second stage a rapid ("catastrophic") flow of hydrogen results within the metal. After the initial loading, said flow (or flux) of hydrogen takes place until the previously-loaded palladium is spent of its deuterons or the material is otherwise damaged.

19. As the Appellant, then Applicant, said that it has been wrong for Mr. Palabrica

" to create needless confusion in an patent application or Court record. The identical original specification and drawings of Serial no. 07/760,970 have already gone through a restriction by the Primary Examiner Daniel Wasil on June 8, 1992. Mr. Wasil separated 07/760,970 into five inventions based upon accuracy and his wisdom. Mr. Wasil's 1992 restriction of 07/760,970 already created several inventions including "method for integrating plural fusion reactors". For example, based upon the case record, Applicant filed "METHOD AND APPARATUS TO INTEGRATE REACTORS INVOLVING REACTIONS WITHIN A MATERIAL", Serial no. 09/ 573,381, Filed: 05/19/2000, a division of Serial no. 07/ 760,970 Filed: 09/17/1991. The record demonstrates that this has been concluded. Simply put, Applicant notes that Examiner Palabrica has shown no basis whatsoever to replace years of communications, and a well-documented record involving

both the Board of Appeals and the Federal Court system and their Judgments, with his paroxysmal *de novo* and *nunc pro tunc* theory and comments --which are at variance with said record and said Judgments. These actions of Mr. Palabrica are consistent with his attempts to change the record and to obfuscate the case (infra). These are unethical and improper actions."

The Appellant (then Applicant) protested the Examiner because the restriction was not proper.

The Appellant (then Applicant) protested the Examiner because this restriction was improper in light of MPEP §808.01(a) because there was disclosure of a relationship between the method and apparatus in the above-entitled application. This relationship overcomes the election requirement because there is no "patentable difference" [MPEP §808.01(a)].
The Appellant (then Applicant) protested the Examiner because this restriction election was improper in light of MPEP 808.02 because the Examiner has not established reasons for insisting upon his latest restriction.

20. The subject matter is claimed by Claims 1, 5-8, 10-14, 21-30, and is a method to control the production of the desired products (such as heat) which includes in combination loading the hydrogen using a first applied electric field, and then at a later point in time applying a second electric field to redistribute said isotopic fuel within said material, with means to obstruct the flow of the loaded hydrogen. Each of these features, and those of the original specification of which this is the divisional has operability. The operability, and usefulness, of the original specification was demonstrated to be correct at the time of the original filing in Fusion Technology (of the American Nuclear Society) and elsewhere which demonstrate operability and utility [validation].

These include, but are not limited to, the following: Swartz, M.R. "Survey of the Observed Excess Energy and Emissions In Lattice Assisted Nuclear Reactions", Journal of Scientific Exploration, 23, 4, 419-436 (2009), Swartz, M., "Excess Heat from Low Electrical Conductivity Heavy Water Spiral-Wound Pd/D2O/Pt and Pd/D2O-PdCl2/Pt Devices", Condensed Matter Nuclear Science, Proceedings of ICCF-10, eds. Peter L. Hagelstein, Scott, R. Chubb, World Scientific Publishing, NJ, ISBN 981-256-564-6, Pages 29-44; 45-54, and 213-226 (2006), Swartz, 1998, Improved Electrolytic Reactor Performance Using p-Notch System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85. These peer-reviewed publications prove Applicant was correct on the filing date of the application.

21. The Examiner is wrong in this 35 U.S.C.§112,¶1 rejection because there IS compliance with 35 U.S.C.§112, first paragraph. The Appellant submits that the first paragraph of 35 U.S.C. 112 is complied with fully and completely. The original specification described the subject matter defined by each of the rejected claims, and enables any person skilled in the art to make and use the subject matter defined by each of the rejected claims, and sets forth the best mode contemplated by the inventor of carrying out his invention. The original specification and claims complied and conformed with the Patent Act. Applicant has been willing to reveal to the public the substance of his discovery and "the best mode ... of carrying out his invention," 35 U.S.C. 112, and should be granted "the right to exclude others from making, using, or selling the invention throughout the United States," for a period of 17 years [35 U.S.C. 154]. In return, the federal patent system is supposed to encourage the creation and disclosure of new, useful, and non-obvious advances intechnology and design in return for the exclusive right to practice the invention for a period of years [United States v. Dubilier Condenser Corp., 289 U.S. 178, 186 -187 (1933)] (***).

(* -- However, in the above-entitled application, the Applicant has received systematic harassment by certain individuals at the US PTO under color of Law. The Board and the American people know it, and the latter are getting weary of the obstruction of this safe, efficient, clean energy production technology and its transfer overseas by said obstruction.)**

Fact 2 - The Claims of '691 Have Operability, Define the Invention, And Are Compliant with 35 U.S.C. §112 First Paragraph.

22. The Examiner is wrong in this 35 U.S.C.§112,¶1 rejection because there IS compliance. The Claims of '691 do have operability, and clearly define the invention, and are compliant with 35 U.S.C. §112, First Paragraph (***). Clearly, one of the most important points rebutting the Office rejections under 35 U.S.C. 112, first paragraph is that the claimed invention should be the focus of the utility requirement.

"Each claim therefore, must be evaluated on its own merits for compliance with all statutory requirements" (MPEP 2107.01, I.).

(***) The appealed claims do not stand or fall together. claims 1, 10, and 21 are separately patentable and do not stand or fall together because they are materially distinct with respect to 35 USC 112 first paragraph. claims 1, 10, and 21 are separately patentable because they are not unduly multiplied, have separate limitations, and are required because the invention described by the original specification of the above-entitled application is very complex.

23. As will now be demonstrated, each step is reasonable and has operability. Independent Claim 1 claims

"(i)n a process for producing a product using a material loaded with an isotopic fuel, a method to control the production of said product".

Claim 1. In a process for producing a product using a material loaded with an isotopic fuel, a method to control the production of said product which includes in combination:
applying an electric field to load said isotopic fuel to said material,
loading said isotopic fuel into said material,
applying a second electric field in a non-parallel direction to the first applied electric fields,
producing redistribution of said isotopic fuel within said loaded metal,
thereby controlling the product produced.

Each step is reasonable and has operability.

24. The second line of the Claim 1 says:

"applying an electric field to load said isotopic fuel to said material,

Demonstrating operability, the original specification states (page 1, lines 10-12), ...

(t)he method and apparatus uses at least two non-parallel electric-fields to control the loading into the material and redistribution of the isotopic fuel within the material."

On reference to the figure, the original specification teaches (page 4, line 26 through page 5, line 3),

" ...label 1 represents the metallic cathode, usually palladium in the preferred configuration. ... The label 7 represents the anode which in the preferred embodiment is composed of palladium. The label 6 represents the solution consisting in the preferred embodiment of a gel containing antidesiccant, in combination with LiOD, palladium salts, and heavy water (D2O). "

25. The third line of the Claim 1 claim says:

"loading said isotopic fuel into said material,"

The original specification refers and teaches (page 5, lines 5-12), for those skilled in the art, .

"The power supply and control unit consists of a current source and reactor control device as described in Swartz (1989) ... capable of filling the cathode with deuterium from an aqueous solution, or one enabling deuterated metals loaded by codeposition of deuterium and palladium."

Demonstrating operability, the original specification teaches (page 5, lines 7-9),

"The application of said power source creates an applied electric field intensity which produces cation flow towards the cathode."

On reference to the figure 1, the original specification (page 5, lines 9-12), continues:

"There results in the near cathode solution (labelled as 5 in figure 1) a buildup of deuterons, and a low dielectric constant (gas bubble) layer. The bubbles are labelled as number 10 in figure 1. There may be spikes or on the cathode (labelled as 11 in figure 1)."

26. The fourth line of the Claim 1 claim says:

"applying a second electric field in a non-parallel direction to the first applied electric fields,"

On reference to the figure 2, the original specification teaches (page 5, lines 14-17),

"Figure 2 is a crossectional drawing .... (t)his device has two orthogonal applied electric fields. The first (labelled E-field number 1 in the the figure) is that which is applied to charge the palladium with deuterons."

Demonstrating operability, the original specification continues (page 5, lines 17-22),

"The second applied electric field intensity is delivered after full charging has been achieved. In the figure the anode and cathode are labelled as 7 and 1. The electrolyte solution or gel is labelled as 6. The connections for the first electric field are labelled as 81 and 82. The connections for the second electric field are labelled as 85 and 86. The mechanical casing is labelled 20."

On reference to the figure, the original specification teaches (page 6, lines 7-13),

"Each device is equipped with orthogonal applied electric fields. The second applied electric field intensity is delivered after full charging. These devices each contain a cathode (labelled 1), intradevice gel containing lithium and palladium deuteroxide (labelled 6), and anode (labelled 7)."

27. The fifth line of the Claim 1 claim says:

"producing redistribution of said isotopic fuel within said loaded metal,"

Demonstrating operability, the original specification teaches (page 7, lines 1-4),

"The result is the piling up of deuterium at the deuteron-impermeable barriers (labeled 55). The heat energy is directed out via the the heat pipes and the thermal bus."

28. The sixth line of the Claim 1 claim says:

"thereby controlling the product produced."

Demonstrating operability, and on reference to the figure, the original specification teaches the heat product is removed (page 6, lines 26-28),

"Said apparatus has a thermal bus connected to the heat pipes which are held in a mechanical connecting system (labelled 20)."

29. Each step is able to each stand alone (MPEP 2111.02) with respect to operability. Compliance of this is obvious and demonstrated line by line. The result is the method to control the production of the desired products (such as heat) which includes in combination loading the hydrogen using a first applied electric field, and then at a later point in time applying a second electric field to redistribute said isotopic fuel within said material, with means to obstruct the flow of the loaded hydrogen. That has considerable utility.

30. Thus, the Examiner is shown to be wrong in this 35 U.S.C.§112,¶1 rejection because Claim 1 distinguishes and limits the invention to a method to control the production of a product produced by a loaded material that includes applying an electric field to load said isotopic fuel into said material, loading said material with said isotopic fuel, thereafter applying a second electric field in a non-parallel direction to the first applied electric field, producing redistribution of said isotopic fuel within said loaded metal, thus, thereby controlling the product produced.

Similarly, the Examiner is wrong in this 35 U.S.C.§112,¶1 rejection because Claim 10 distinguishes and limits the invention to a method to control the production of a product produced by a loaded material that includes applying an electric field to load said isotopic fuel into said material, loading said material with said isotopic fuel, thereafter applying a second electric field in a non-parallel direction to the first applied electric field, thereby effecting redistribution of the fuel within said loaded material.

Similarly, the Examiner is wrong in this 35 U.S.C.§112,¶1 rejection because Claim 21 distinguishes and further limits the invention to a method to effect redistribution of an isotope of hydrogen in a material which includes applying an electric field to load said isotope of hydrogen into said metal, loading said metal with said isotope of hydrogen, thereafter applying a second electric field in a non-parallel direction to the first applied electric field, thereby distributing said isotope of hydrogen within said loaded metal.

Fact 3 - Peer-Reviewed Publications Demonstrate Operability and Prove Enablement

31. The Examiner is wrong in this 35 U.S.C.§112,¶1 rejection because there IS operability. First, most importantly, the above-entitled invention works, is taught in the original specification, and is claimed by the claims. Second, that the Examiner is wrong is borne out *de jure* by peer-reviewed publications which have been submitted repeatedly (confer Exhibit "C" and "D"), have been removed and ignored repeatedly by some in the Office. Some of the submitted, ignored, relevant published papers include Swartz, M.R. "Survey of the Observed Excess Energy and Emissions In Lattice Assisted Nuclear Reactions", Journal of Scientific Exploration, 23, 4, 419-436 (2009), Swartz, M., "Excess Heat from Low Electrical Conductivity Heavy Water Spiral-Wound Pd/D2O/Pt and Pd/D2O-PdCl2/Pt Devices", Condensed Matter Nuclear Science, Proceedings of ICCF-10, eds. Peter L. Hagelstein, Scott, R. Chubb, World Scientific Publishing, NJ, ISBN 981-256-564-6, Pages 29-44; 45-54, and 213-226 (2006), Swartz, 1998, Improved Electrolytic Reactor Performance Using p-Notch System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85.

32. These peer-reviewed publications include some published by the American Nuclear Society and the American Chemical Society, and like the ignored, timely-submitted Declarations, they establish facts. The published peer-reviewed scientific articles prove Applicant was correct on the filing date of the application -- and they demonstrate that growing numbers of the scientific community consider the positive results of Appellant's work as being operative and of utility. It is those individuals in the scientific community who actually research and write the scientific technical papers which undergo peer-review, file patent applications, and attend the Conferences who accurately evaluate inventions, products and publications. This community is defined as those "skilled in the art". They disagree with the Examiner's claim of putative lack of operability, and utility, of this invention.

33. NOTA BENE: Applicant's peer-reviewed publications submitted by the Applicant demonstrate validation, and fully address all matters criticized by the Office. They prove that the present invention was operable at the time it was filed. They are sufficient to convince one of ordinary skill in the art of the invention's utility. The peer-reviewed published papers also expose the Office's antiscientific discrimination regarding "cold fusion". These are the obvious, salient, reasons why they are ignored by the Examiner now, and removed from the file folder, previously.

34. Where are the Examiner's substantive responses to the Applicant's publications in peer-reviewed journals with evidence demonstrating that he has correctly taught operability and enablement regarding loading and loading flux? These include Swartz. M., 1994 "Catastrophic Active Medium Hypothesis of Cold Fusion", Vol. 4. "Proceedings: "Fourth International Conference on Cold Fusion", sponsored by EPRI and the Office of Naval Research, and Swartz, M., 1997, "Hydrogen Redistribution By Catastrophic Desorption In Select Transition Metals", Journal of New Energy, 1, 4, 26-33, but also Swartz, M, 1998, Transactions of the American Nuclear Association, Nashville, 78, 84-85, Swartz, M., "Quasi-One-Dimensional Model of Electrochemical Loading of Isotopic Fuel into a Metal", *Fusion Technology*, 22, 2, 296-300 (1992), Swartz, M., "Possible Deuterium Production from Light Water Excess Enthalpy Experiments Using Nickel Cathodes", *Journal of New Energy*, 1, 3, 68-80 (1996), M. R. SwarTZ, "Generalized Isotopic fuel Loading Equations", *"Cold fusion Source book, International Symposium on Cold Fusion and Advanced Energy systems"*, Ed. Hal Fox, Minsk, Belarus, May (1994), Swartz, M., "Isotopic Fuel Loading Coupled to Reactions at an Electrode", Vol. 4, Proceedings: *"Fourth International Conference on Cold Fusion"*, ibid., 33 (1994); Swartz, M., "ISOTOPIC FUEL LOADING COUPLED TO REACTIONS AT AN ELECTRODE", *fusion Technology*, 26, 4T, 74-77 (December 1994), M. R. Swartz, "Catastrophic Active Medium Hypothesis of Cold Fusion", Vol. 4, *Proceedings: "Fourth International Conference on Cold Fusion"*, sponsored by EPRI and the Office of Naval Research, December (1993).

35. As another example, where are the Examiner's substantive responses to the several other publications which the Applicant has published in Fusion Technology (of the American Nuclear Society) and elsewhere which demonstrate operability and utility [validation]? These include, but are not limited to, the following: Swartz (1998), Improved Electrolytic Reactor Performance Using π-Notch System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85, Swartz. (1997), Fusion Technology, 31, 63-74, 1997, Swartz (1999), "Generality of Optimal Operating Point Behavior in Low Energy Nuclear Systems", Journal of New Energy, 4, 2, 218-228 (1999), Swartz, 1997, "Consistency of the Biphasic Nature of Excess Enthalpy in Solid State Anomalous Phenomena with the Quasi-1-Dimensional Model of Isotope Loading into a Material", Fusion Technology, 31, 63-74, Swartz, 1998 "Optimal Operating Point Characteristics of Nickel Light Water Experiments", "Proceedings of ICCF-7", and Swartz, 1997, "Biphasic Behavior in Thermal Electrolytic Generators Using Nickel Cathodes", IECEC 1997 Proceedings, #97009; Swartz, 1998. Where is the Examiner's Response to Swartz, 1998, Improved Electrolytic Reactor Performance Using π-Notch

System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85?

36. As another example, where are the Examiner's substantive responses to the Applicant's teachings of errors and artifacts which can give rise to false indications of "excess heat", Applicant's teachings of the analysis and measurement of thermal noise (Swartz 97B, Swartz 97F, Swartz 97D), means of calibrating said signals for long term analysis (Swartz 97E, Swartz 97D, Swartz 97C, Swartz 96C), correction for Bernard instability (Swartz 96D), correction for said noise (Swartz 97F), and for other types of artifactual signal (Swartz 97C, Swartz 96A, Swartz 94C, Swartz 94D).

37. As another example, where are the Examiner's substantive responses to the Applicant's publications in peer-reviewed journals which have taught standards and quality control ("Q/C") which are relevant to experimental operability? These include Swartz, 1997 ["Patterns of Failure in Cold Fusion Experiments, Proceedings of the 33RD Intersociety Engineering Conference on Energy Conversion, IECEC-98-I229, Colorado Springs, CO, 1998], Swartz 1996 ["A Method To Improve Algorithms Used To Detect Steady State Excess Enthalpy", Transactions of Fusion Technology, 26, 156-159], but confer also SWARTZ, "IMPROVED CALCULATIONS INVOLVING ENERGY RELEASE USING A BUOYANCY TRANSPORT Corrections", Journal of New Energy, 1, 3, 219-221 (1996); Swartz, "Potential for Positional Variation in Flow Calorimetric Systems", Journal of New Energy, 1, 126-130 (1996)]; SWARTZ, "DEFINITIONS OF POWER Amplification Factor", J New Energy, 2, 54-59 (1996); Swartz, "Explanations for Differences Between Reports of Excess Heat in Solid State Fusion Reactions", J. New Energy, 2, (1997); Noise in Cold Fusion Systems", J. New Energy for Fall 1997; Swartz, "Relative Impact of Thermal Stratification", J. New Energy, 1, 2, 141-143 (96)); SWARTZ, "SOME LESSONS FROM OPTICAL EXAMINATION OF the PFC Phase-II CALORIMETRIC CURVE", Vol. 2, Proceedings: "Fourth International Conference on Cold Fusion", sponsored by EPRI and the Office of Naval Research, December (1993), published July 1994).

38. The Examiner has not been fair in this matter. There has never existed a single honest reason to doubt any one (1) of the objective unbiased observers of the objective truth, who wrote averments corrborating support of Applicant. In this case, given the submitted [and received] Declarations, reason never existed doubting the objective truth of the statements relied on for enabling support. Therefore no basis exists for a rejection under either section 112, ¶1 for lack of enablement as a result of "the specification's ... failure to disclose adequately to one ordinarily skilled-in-the-art 'how to use'

the invention without undue experimentation," or section 101 for lack of utility "when there is a complete absence of data supporting the statements which set forth the desired results of the claimed invention." [Environtech Corp. v.Al George, Inc., 730 F.2d 753, 762, 221 USPQ 473, 480 (Fed. Cir. 1984); also In re Brana, 51 F.3d 1560, 1564 n.12, 34 USPQ2d 1436, 1439 n.12 (Fed. Cir. 1995)].

39. Given the multiply destroyed/removed/sequstered/"lost" peer-reviewed publications submitted, the Examiner's action is inconsistent with the reasoning of In re Vaeck [947 F.2d 488, 495-96, 10 USPQ2d 1438, 1444 (Fed. Cir. 1991)] which states that an enablement rejection under section 112,¶1 is only appropriate where the written description fails to teach those skilled-in-the-art, like the Declarants, to make and use the invention.

40. **The Appellant would like to know how many of Applicant's publications does it take in prestigious peer-reviewed journals before the Office (or Examiner) accepts the clear, substantiated, evidence that a technology exists?** Applicant's publications in peer-reviewed journals confirm operability as taught years earlier in the original specification and claims.

Undisputed Fact: Declarations Confirm Compliance with §112 First Paragraph

Fact 4 - '691 Has Operability Based Upon the Declarations

41. That the Examiner is wrong is also corroborated *de facto* by the submitted, and ignored, Declarations. The peer-rerviewed publications, open demonstrations, and Declarations demonstrate the existence of lattice assisted nuclear reactions including the generation of heat. Nothing of substance or scientific foundation has been presented by the Office or other Art which rebuts the content of the above-entitled application OR the Declarations or the Amicus Curiae Briefs of Straus, Chubb, Mallove, Fox, and Valone. Nor has the Examiner presented any argument of substance to support his incorrect, proven-wrong, notions with respect to any of the matters discussed therein. The pro se Appellant cites, and cited, said Declarations from '970 and the other cases before the Board.

42. The above-entitled invention, '691 (like '970 before it and from which it is a continuation in part by demand of the Examiner Palabrica) has operability and utility. This is confirmed by unrebutted, important Declarations and Amicus Briefs which the Applicant has submitted and referenced. The Declarations contain factual statements which detail rebuttals to the Office and support the Applicant's position. The

Declarations constitute significant reputable evidence of record and a bona fide case which is quite convincing and persuasive to one who is open-minded and not biased.

43. Applicant's Declarations show precisely that the Examiner is inaccurate on issues of operability, refute all of his points of rejection, and substantially, completely and fully address and precisely dispute all of the Examiner's points of rejection and all matters criticized by the Office. They also prove the Office's hostile and discriminatory notions are wrong in this matter.

44. Said Declarations document Applicant's demonstrations of the Applicant's invention, including one open to the public, at the Massachusetts Institute of Technology [Cambridge, MA] for a week before hundreds of people. They support that the invention DOES operate as indicated. They prove that the specification adequately described the subject matter recited in the claims and demonstrate that it operates as stated. The Declarations prove that the adequately written description requirement is met and demonstrate that the teachings of this invention are sufficient for one skilled-in-the-art to have understood the inventor to have been in possession of the claimed invention at the time of filing.

45. Said Declarations demonstrate validation, operability, considerable utility, and therefore enablement of the present invention and Applicant's claimed subject matter. They indicate that the teachings in the original specification, claims, and drawings are sufficient and convincing to one of ordinary skill in the art -- heralding operability and conformity and compliance with the 35 U.S.C. §112, §1 (first paragraph) and the "enablement" requirement. Validation occurs when scientists skilled in the state of the art states it is so. These Declarations indicate that the measurement of activity has utility, and the precise invention has operability. The Office corruptly ignored the testimony in the past, allowing several Declarants to die (Drs. Scott Chubb and Eugene Mallove, for example) without their words having even been fairly read.

46. Proof of operability and utility are sufficient if convincing to one of ordinary skill in the art [In re Irons, 52 CCPA 938, 340 F.2d 974, 144 USPQ 351 (1965)], the Declarations of so many. Said Declarations were received by the Office and have been systematically ignored. Said Declarations fully addressed all matters criticized by the Office regarding operability and utility, substantially and fully. Several Affiants even describedthe week long open demonstrations of Applicant's technology at the Massachusetts Institute of Technology in the Electrical Engineering building in August 2003 during ICCF-10. They confirmed the above-entitled invention's operability, definiteness and utility consistent with requirements [In re Gazave, 379 F.2d 973, 978, 154

USPQ 92, 96 (CCPA 1967); In re Chilowsky, 229 F.2d 457, 462, 108 USPQ 321, 325 (CCPA 1956); In Re Jolles, 628 F.2d 1322, 206 USPQ 885 (CCPA 1980).

47. Said Declarations remain ignored in the their factual content because they refuted the Offices' erroneous position. Said Declarations proved that the present claimed invention measures activity and meets at least one stated objective, and therefore utility under 101 is clearly shown [Standard Oil Co. (Indiana) v. Montedison, S.P.A., 664 F.2d 356, 375, 212 USPQ 327, 344 (3rd Cir. 1981), cert. denied, 456 U.S. 915, 102 S.Ct. 1769, 72 L.Ed.2d 174 (1982); E.I. du Pont de Nemours & Co. v. Berkley & Co., 620 F.2d 1247, 1258 n. 10, 1260 n. 17, 205 USPQ 1, 8 n. 10, 10 n. 17 (8th Cir.1980); Krantz and Croix v. Olin, 148 USPQ 659, 661-62 (CCPA 1966); Chisum on Patents, 4.04[4] [1983]; RAYTHEON COMPANY v. ROPER CORPORATION, U.S.C.A., Federal Circuit, 1983, 724 F.2d 951, 220 USPQ 592].

Fact 5: The Skilled-in-the-art Support Applicant

48. Where is the Examiner's substantive response to Applicant's cited Declarations, including the the Swartz declaration, the Declaration of Straus (4/22/94), and the *Amicus Curiae* Briefs of Drs. Edmund Storms (2/21/01), Talbot Chubb (2/22/01), Eugene Mallove (3/24/00) and Hal Fox (2/21/01)? In the new arguments made by the Office, there is no substantive response or answer to the Declarations previously submitted with the Applicant's last Communication to the Examiner even though the Affiants addressed operability and utility of this invention, and even though said Declarations were referred to and addressed several times by Applicant. The Office fails to indicate which, if any, of the averments (or pages) in the Declarations and Amicus Curiae Briefs have been formally considered by the Office and, if so, how they reached their conclusion.

49. The Declarations are evidence supporting the Applicant's position, and substantially and fully address all matters and issues criticized by the Examiner, and contain averments regarding evidence establishing the utility, validation, and operability of the Applicant's claimed subject matter. The Declarations contain factual statements directly addressing how the specification adequately described the subject matter recited in the claims. They demonstrate that a person of ordinary skill in the art would have understood the inventor to have been in possession of the claimed invention at the time of filing, and that the invention operates as stated, and as explicitly taught in the original specification and claims. The Declarations prove that the Applicant taught in the original specification and claims how his apparatus works and claimed the invention.

50. The Affiants, skilled-in-the-art, state that the "environment" in which the above-entitled invention operates "does exist" and that there is no evidence of "heat" and "loading". The Declarations include the Straus (4/22/94), Swartz, and other Declarations, including but not limited to the Amicus Curiae Briefs of Edmund Storms (2/21/01), Talbot Chubb (2/221/01), Eugene Mallove (3/24/00) and Hal Fox (2/21/01) and Affiants who have been the Office's own witnesses.

51. As the Amicus Curiae Brief of late Eugene F. Mallove, Sc.D (Editor, New Energy Research Laboratory, NH) has stated,

"The most notable characteristic of the attack against the Swartz patent application at hand is its stale fixation with misrepresented events of 1989, its citation of erroneous reports, and its continued argument from supposed authority, rather than from evolved science and meticulous experiment."

52. As the Prof. Hagelstein's (MIT, Cambridge) Declaration states,

"Today, D/Pd loading is known to be very important. There have been numerous peer-reviewed published papers that show positive excess heat results in replications of the Fleischmann-Pons experiment. If the USPTO have asserted otherwise, they are simply mistaken."

53. As the late Dr. Scott R. Chubb has said in '970:

"the patent office (PTO) has ignored the facts involving the present invention, ... The patent application provides a well-defined procedure, understandable by anyone skilled in the art, that can be used to implement the invention. ... It is evident that the patent office has become recalcitrant, with its opinion in contradiction to existing evidence as promulgated through peer-reviewed literature."

"Dr. Swartz has invented an important, new device, whose purpose has value for measuring activity of a sample. ... I assert that the PTO has failed to distinguish between the very different sets of claims associated with measurements of high energy particles and those involving excess heat."

[Declaration of Dr. Scott R. Chubb (8/2001)]

54. Corroborating the above, Dr. Hal Fox has said:

"It is my professional judgment that the method of measuring the activity of sample in the above-entitled action is clever, not obvious, and is an important invention with utility. ... The rejection has ignored numerous filings delivered to the Patent Office by Dr. Swartz and others. ... It is not credible that hundreds of scientists and inventors are all mistaken in their experiments and data, or that only the patent examiners are sufficiently educated to point out the faults of these inventions."

[Declaration of Dr. Hal Fox (8/2001)]

55. The Office's own witness in '457, Dr. Michael Schaffer (cited in the Exhibit supplied with the rejection) rebutted the USPTO and said:

"I do not see how anyone could construe anything that I wrote at Scientific American's site to imply that there is "no utility" in cold fusion, much less in instruments that might be used in cold fusion and other scientific experiments."

"It appears that the Board of Patent Appeals considers me an expert on this subject. As an expert ... I would agree [Dr. Swartz's invention] ... does does have utilty"

- [Letter of Michael J. Schaffer (8/7/2001)]

56. In the international community, Dr. McKubre is among the most highly regarded of those skilled in the art. Dr. McKubre stated:

"For me ... perhaps the best report at this conference, was that of Mitch Swartz. ... I have always felt that the quality of the calorimetric observations in the nickel light water studies has been less than the quality of the calorimetric observations in the palladium-deuterium system. ... Mitch Swartz presented a very clear piece of calorimetric evidence which is certainly going to cause me to reconsider my belief and understanding of the nickel-light water system and its capacity to produce anomalous heat" [Dr. Michael McKubre, SRI, at his closing "Summary During ICCF-7", Infinite Energy, 4, 20 , pp. 34-35, (1998)]

57. As the Prof. Hagelstein's (MIT, Cambridge) Declaration states,

"The scientific results presented by Dr. Mitchell Swartz on his Phusor experiments, in which excess power and total energy is measured, looks very good. His results are competitive in terms of reproducibility and power gain with the best results obtained by other groups around the world. The reproducible en-ergy gains that he has reported are the highest so far reported by any group."

"Water heaters that run on electricity from household wall plugs are currently sold to produce hot water in parts of the country where oil delivery and natural gas delivery are unavailable or inconvenient. Electricity in the Boston area costs near $0.20/kW-hr, which seems very expensive. Swartz's Phusor ex-periments have shown energy gains at least up to 10x. A Phusor-based water heater with an energy gain of 10x would be competitive with existing water heaters. I would buy one if available."

58. As the Prof. Hagelstein's (MIT, Cambridge) Declaration states,

"No one in the field considers Swartz's Phusor experiment to be the same as what Fleischmann and Pons did, or what others have done. It is clearly an original experiment distinct from all that have come before. The USPTO is simply mistaken if they assert otherwise. The specification of "low paramagnetic, low conductivity deuterium oxide, 99.99%, from Cambridge Isotope Laboratories, Andover MA" adequately specifies what is meant by pure heavy water in the context of Swartz's Phusor experiment. Assertions to the contrary in this case by the USPTO are incorrect."

59. As the Prof. Hagelstein's (MIT, Cambridge) Declaration states,

"Swartz demonstrated his Phusor experiment at MIT in connection with ICCF10 in August 2003. Data from this experiment show significant excess heat. Swartz has demonstrated his Phusor experiment in his Weston laboratory, in Weston, MA numerous times for me and for others."

60. As the Dr. Brian Ahern (ret. Air Force, MIT) Declaration states,

"I have known Mitchell Swartz since 1991. I would like to express my strong support for the work being conducted by Dr. Mitchell Swartz in the field of isotopic fuel loading of metal lattices and lattice assisted nuclear reactions. I believe his investigations are some of the most thorough and precise yet conducted in isotopic loading and lattice assisted nuclear reactions, and that the thermal effects he is observing are real and will ultimately be useful on a large scale."

61. This submitted Evidence includes the following Declarations and other testimony. The Applicant has presented at ICCF-10 [Cambridge, MA; to which the Examiner and the Office's counsel were invited (through said counsel), but did not attend] other technologies in this field, including an open demonstration for a week. This was covered around the world (all documents fastidiously removed at the USPTO).

"Dr. Mitchell Swartz's Fleischmann/Pons-type electrolytic palladium Phusor/low electrolyte conductance heavy water/platinum cell performed flawlessly in Prof. Hagelstein's lab at MIT during ICCF10. Its excess power ranged from 167% to 267% as Dr. Swartz altered the experimental conditions."

[Dr. Eugene Mallove, Infinite Energy Magazine 9/2003]

"Greetings. I am back from ICCF-10 ... Swartz, and Dash et al., live demonstrations at MIT. Marvelous work! Bravo to everyone! McKubre said he would never have the guts to try this, because so much can go wrong when you move an experiment."

[Jed Rothwell, Subject: Impressions of ICCF-10, 3 Sep 2003]

"Three excess heat experiments were shown in live demonstrations at ICCF10, including two on August 26, in a laboratory at MIT that was open to the public: A cell in a precision calorimeter was shown by Mitchell Swartz and Gayle Verner at MIT."

[http://lenr-canr.org/iccf10/iccf10.htm]

And yet as another example:

"La dixième conférence internationale sur la fusion froide ICCF10 s'est tenue à Boston aux Etats-Unis, du 24 au 29 août 2003. 120 personnes de 15 nationalités différentes y ont participé. Elle était organisée par le Professeur Peter Hagelstein, du MIT. ... "Deux démonstrations de fusion froide ont été présentées : l'une par le professeur John Dash de l'université de l'Oregon à Portland, et l'autre par le Dr Mitchell Swartz. Les deux expériences ont démontré la production d'excès de chaleur. ... M. Swartz a obtenu de forts excès de chaleur, jusqu'à 300% avec de l'eau lourde ultra pure de résistivité 220 k?, sans rajout d'électrolyte, avec cathode de palladium hélicoïdale. "
[Rapport sur L'International Conference on Cold Fusion ICCF10]

62. NOTA BENE: Several of the Office's "witnesses" have thereafter taken the time to write Amicus Curiae Briefs and letters to the effect that the Examiner has absolutely misstated what they wrote or implied. Other Declarants have stated that the Office is wrong. All have been impugned, ignored, or relegated improperly to 'opinion' and the wastebasket. How many decades must witnesses be ignored by the Board of Patent Appeals during an energy crisis that began with the Exxon Valdez and continues to this day?

Fact 6 - The Rule 'One Declarant Being Sufficient' is Ignored by the Office

63. Exactly how many Declarants does it take to overcome the Examiner's unsubstantiated rejection? The answer is simple. The answer is quantitative. The answer, by the Examiner(s), is ignored. The answer is one (1). Operability and Utility are fact questions. Proof of utility is sufficient if it meets at least one stated objective. In this case, it does. In this case, given the averments of so many Declarants, utility under USC 101 is clearly shown. The Examiner has ignored that the patent application has met at least one (1) stated objective [Standard Oil Co. (Indiana) v.Montedison, S.P.A., 664 F.2d 356, 375, 212 USPQ 327, 344 (3rd Cir. 1981), cert. denied, 456 U.S. 915, 102 S.Ct. 1769, 72 L.Ed.2d 174 (1982); E.I. du Pont de Nemours & Co. v.Berkley & Co.,620F.2d1247,1258 n.10,1260 n17,205 USPQ1,8n10,10n.17(8th Cir.1980); Krantz and Croix v.Olin, 148 USPQ 659, 661-62 (CCPA 1966); Chisum on Patents, 4.04[4] [1983]; RAYTHEON COMPANY v.ROPER CORPORATION, U.S.C.A., Federal Circuit, 1983, 724 F.2d 951, 220 USPQ 592].

The Applicant would like to know how many Declarations does it take before the Office (or Examiner) accepts the clear, substantiated, evidence that a technology exists? The law says one. The Examiner will not answer and ignores dozens of Declarants, although he never taken an Oath himself and has been shown to be thoroughly disingenuous.

CONCLUSION: The Declarations remain ignored in their factual content because they rebut the Offices' erroneous position about operability and utility. Validation occurs when scientists actually skilled, and working, in the state-of-the-art state it to be so. Scientists write the technical papers which undergo peer-review, file the patents applications, and attend international conferences, disagree with the Examiner. Given that in this case there has been no response to, or dispute of, said Declarations the Office is obligated by law to assume that all Declarants assertions are true [Lewis v. Bours, 119 Wn.2d 667, 670, 1992], and therefore, the Examiner has erred by failing to consider those skilled-in-the-art who counter the rejection under 35 U.S.C.§112 and §101.

Fact 7 - Declarant's Statements Wrongly Called 'Opinion' by the Office

64. The Examiner cannot dismiss Declarations improperly to "opinion"-status without an adequate explanation of how the Declarations failed to overcome the prima facie case initially established by the Examiner. The Examiner's error becomes further unlawful because the Examiner has also rejected In re Alton which requires that even the use of the words "it is my opinion" to preface what someone of ordinary skill in the art knows does not transform the factual statements contained in the declaration into opinion testimony.

Undisputed Fact: Operability and Utility of This Invention Are Independent of Cold Fusion and Excess Heat

Fact 8 - Operability and Utility of This Invention Are Independent of Cold Fusion and Excess Heat

65. The Examiner is wrong because the invention works even without the need for cold fusion. First, it says so right in the originial specification. Despite that, the Examiner and Office continue the vilification of the Applicant and his invention by linking it to "cold fusion". It is obvious that this is so that the Examiner can cite every mean, irrelevant, immaterial reference he can find. The problem is that the Examiner's notion is wrong. First, the invention works in other, non-cold fusion environments, too; and with great utility.

66. Second, attention of the Examiner, Court and Board is directed to the fact that Claim 1 distinguishes and limits the invention to a method to control the production of a product produced by a loaded material that includes applying an electric field to load said isotopic fuel into said material, loading said material with said isotopic fuel, thereafter applying a second electric field in a non-parallel direction to the first applied

electric field, producing redistribution of said isotopic fuel within said loaded metal, thus, thereby controlling the product produced. Controlling reactions, chemical, medical, and otherwise, have been used for centuries by academicians, physicians, and the military even before the reactions have been understood. Consider, just controlling heart beat through gait. That was designed before it was even known what a muscle or heartbeat even consisted of. Therefore, it is not logically necessary for Applicant in this case to argue the merits of cold fusion as it was known in 1989, or in 2011, or even issues of it associated with heat. The applicant is simply claiming a method to control the production of a product produced by a loaded material that includes applying an electric field to load said isotopic fuel into said material, loading said material with said isotopic fuel, thereafter applying a second electric field in a non-parallel direction to the first applied electric field, producing redistribution of said isotopic fuel within said loaded metal, thus, thereby controlling the product produced.

Fact 9 - Examiner Relies on Cloth Cut of Other Art

67. The Examiner is wrong because the Examiner wrongly, incorrectly, and maliciously, presumes that THIS invention is the same as used by Drs. Fleischmann and Pons (hereinafter F+P), and uses it as a segue to ignore THIS application. The Examiner then takes this unlawful "leap of faith" on reference to other irrelevant, immaterial art ("FP" or "F+P") while systematically ignoring Appellant's (then Applicant's) submitted original specification, Declarations, and publications [Exhibits which prove the Office wrong, disingenuous, and (after two decades, simply) malicious]. The cited art pointed to by the Examiner is not relevant for any of several reasons. The cited art utterly fails to describe THIS invention. Also, the "standard theory" does not even mention the lattice, which the Applicant and others have now proven to be significantly important.

As shown below, the Examiner and Office are illogically attached [if not fixated; confer the Ahern Declaration] to Drs. Fleischmann and Pons (hereinafter "F+P", or "FP") as they demean them, and indirectly by innuendo, the Appellant (then Applicant). The Examiner's references do not apply to the present invention, but rather are criticism of other work in the field, "FP" (for Drs. Fleischmann and Pons), or involve experiments which were not done using the techniques taught in the original specification and claims of the above-entitled application (thereby actually indirectly proving the utility of the present Applicantion). The Examiner deviates from the present invention, and upon his systematic inaccurate and improper reference to other art ("FP" or "F+P") which he purports did not exist or was flawed, again makes a false segue to attempt to invalidate the Applicant's independent work over more than twenty

three years which has been described in more than sixty papers in peer-reviewed scientific journals.

68. The Office is unfair, and cruel to ignore rebutting Evidence. The Law states that enablement must be judged on this original specification and claims. The present invention is not the work of Pons and Fleischmann or their subject matter. Despite the serial disingenuity of the Office, the Applicant's original specification and Claims in each case taught the subject matter defined by each of the rejected claims, set forth the best mode contemplated with an adequately written description of how to operate the invention, so that an artisan or those skilled-in-the-art, could practice it without undue experimentation, and distinctly pointed out and claimed the subject matter which constitutes the invention. These teachings were precise, clear, and unambiguous to a person skilled in the art, and adequately presented so that an artisan could practice it without undue experimentation [cf. Declarations and Amicus Curiae Briefs]. The Examiner's continual referral to other much less relevant art is not really a rebuttal of this invention, but is a prejudicial attack against the Applicant, in disguise despite the Examiner's handwaving otherwise.

Fact 10 - In all Applicant's Applications, the Office Claimed Applicant's Inventions are 'F+P'

69. The Office and Examiner have also been inaccurate in all other of Applicant's inventions in this field. Every single one The response of the Office to the Applicant's detailed efforts has been to issue flawed 'boiler plate' denials Constitutional rights while IGNORING EVIDENCE. The issue is that other peoples' work is not relevant to this specific invention. Instead of addressing the invention as it was actually taught in the original specification and claims, the Office has solely relied upon reference to art cut of a cloth other than the original specifications and the Claims. So, for two decades, no matter which of the Applicant's invention's in this field has been "examined", there has been essentially one, and only one, response from the USPTO. It is F+P.

The Applicant's above entitled invention? The USPTO says it is F+P.

The Applicant's cathode vibrator to measure loading? The USPTO says it is F+P.

The Applicant's generation of electricity? The USPTO says it is F+P.

The Applicant's system to assemble multiple LANR systems? The USPTO says it is F+P.

The Applicant's use of increasing temperature to trigger reactions? The USPTO says it is F+P.

The Applicant's optimal operating points? The USPTO says it is F+P.

The Applicant's system to increase tardive heat? The USPTO says it is F+P.

The Applicant's multiring calorimeter? The USPTO says it is F+P.

The Applicant's use of microwave radiation? The USPTO says it is F+P.

The Applicant's use of nickel metamaterials with ultrapure water? The USPTO says it is F+P.

No matter what the Applicant's invention, there is one response from the USPTO. The USPTO says it is F+P.

70. It is an uncontested fact that the ONLY claimed invention should be the focus of the Office review. Enablement must be judged on this invention's original specification and claims. In this case, to harass the Applicant and deny his civil and Constitutionally-protected rights, and deviating from the normal standards of review, the Examiner and the Office have misread the invention '691, just as it did '457 and '970 and all the others before it. To allow this charade to continue, the Examiner and the Office have systematically misdescribed Appellant's inventions while failing to respond to submitted Declarations and publications in this invention '691, just as it did '457 (confer Exhibit "F") and '970 (from which the present Continuation-in-part is derived), and '258 (a case which was before the Board and about to return) and all the others before it. This will be shown with multiple examples.

IMPORTANT CONCLUSION: If the Examiner must rely upon reference to art cut of a cloth other than this specification and claims, then his position must indeed be quite weak.

Fact 11 - As Another Corroborating Example, in '457 the Office Solely Relied on Cloth cut of Other Art

71. As just one example, in the past, in '457, Applicant's invention, a novel calorimeter (a heat-measuring instrument) and a "method to ... characterize (a) sample", the invention was NEVER discussed. The Office ignored the evidence, ignored the invention, and "hand waved" away from '457, now 058, instead pointing to 'cold fusion' as if it were a forbidden word. But it was wrong. Cold fusion was merely one of several scientific and research environments in which the present invention finds utility. Only by such improper action as systematically ignoring evidence can the Office and Board purport that this invention has no utility.

Attention of the Court and Congressional review are directed to the Proof; and there is much of it. Although '457 is a novel calorimeter (a heat-measuring instrument) and a "method to ... characterize (a) sample", absolutely none of the words which encompass the invention and the claims were EVER mentioned in the Decision from the Board of Patent Appeals in '457. Instead, the Decision of the Board inaccurately

substituted the words "cold fusion" repeatedly for the words "heat production", and for the word "activity", and for the words "electric power drive", and for "thermally monitoring", "thermal output", "optimum drive condition", and even for "multiring calorimeter". Documenting this, the egregious Decision (simply rubberstamping false statements from the Examiner) referred to "cold fusion" eighty-six (86) times. But the truth is that the words which defined '457 and '058, like 'thermal output","thermally monitoring", "electric power drive", "optimum drive condition", and "multiring calorimeter" were never even used once, not one time, in the Decision.

72. In '457, nothing in the rejection addresses or discusses the invention, which is the same as the present, above-entitled invention. This is saliently demonstrated as follows. In '457, the equivalent claim to Claim 1 in '058, was Claim 13. It described "a method to determine the optimum electrical drive condition for said sample and thereby characterize said sample". The invention is used to "measure activity" which REFERS TO the measurement of HEAT GENERATION from a sample, as discussed in the original specification and claims including in FIGURES 5, 6, 7. In '457, attention is directed to the fact that although the invention is used to "measure activity", that is discussed in the rejection zero (0) times. Similarly, the key features of claim 13 are each absolutely and totally ignored in the egregious rejection.

Claim 13 teaches and claims "thermally monitoring", but the rejection discussed that zero (0) times.

Claim 13 teaches and claims "electric power drive", but the rejection discussed that zero (0) times.

Claim 13 teaches and claims "thermal output", but the rejection discussed that zero (0) times.

Claim 13 teaches and claims "optimum drive condition", but the rejection discussed that zero (0) times.

Claim 13 teaches and claims "multiring calorimeter", but the rejection discussed that zero (0) times.

By contrast, the rejection discussed "Huizenga" (on reference to other book) thirteen (13) times.

By contrast, ignoring the present invention and claims, the rejection elects to only focus on "cold fusion" which it mentions eighty-six (86) times.

♦

Fact 12 - The Office's Reliance on Cloth Cut of Other Art Is Not Lawful

73. The Office's unsubstantiated claim that the invention lacks operability is always imagined by the Examiner based upon his excluding Applicant's submissions and replacing them solely with other peoples' work, such as F+P. That is not proper.

Attention of the Court and Congressional review are directed to the fact that even now --22+ years after FP, the Office still, always drifts toward criticism of "FP". The present invention is NOT the work of Pons or Fleischmann despite the Examiner's innuendo. This demonstrates systematic discrimination by the Office and the Examiner(s) against the Appellant for reasons unclear, under color of Law, to deny justice, and on information and belief, to enable transfer of the technology to other countries overseas.

74. By ignoring the description of this patent and focusing on "F+P", the Examiner has ignored and rejected MPEP §2111.01. The Office's rule [M.P.E.P. §2111.01] requires that "the words of a claim ... must be read as they would be interpreted by those of ordinary skill in the art".

75. By ignoring the description of this patent and focusing on "F+P", the Examiner has ignored and rejected the reasoning of In re Fouche [439 F.2d 1237, 1243, 169 USPQ 429, 434, (CCPA 1971) and In re Zletz [893 F.2d 319, 13 USPQ2d 1320 (Fed. Cir. 1989)] which state that an invention (in structure, operation and composition) is defined by the claims and the original specification.

76. By ignoring the description of this patent and focusing on "F+P", the Examiner has ignored and rejected the reasoning of In re Morris [also Ex parte Porter] because the interpretation of an issue of fact, like operability, must read on the original specification and claims and be predicated upon the Declarations to a conclusion consistent with what one who is skilled-in-the-art would reach.

77. By ignoring the description of this patent and focusing on "F+P", the Examiner has ignored and rejected the reasoning of In re Zletz [893 F.2d 319, 13 USPQ2d 1320 (Fed. Cir. 1989)] because the specification clearly and explicitly stated the meaning of the terms in the claims which means that the invention is a method to measure activity.

78. By ignoring the description of this patent and focusing on "F+P", the Examiner has ignored and rejected the reasoning of In re Prater, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969)] which requires the Examiner to refer to the claimed invention as the focus of its Office communication, but he has not by drifting toward criticism of "FP" again while ignoring all the figures and all the data and all the information in the application. It is unfair for the PTO to repeatedly weave systematic misstatements into its imagined cloth cut of other art.

79. By ignoring the description of this patent and focusing on "F+P", the Examiner has ignored and rejected the reasoning of In re Hogan [559 F.2d 595, 60S, 194 USPQ 527, 537 (CCPA 1977)] which discusses that enablement must be judged on the original specification and claims.

80. By ignoring the description of this patent and focusing on "F+P", the Examiner has ignored and rejected the reasoning of In re Ziegler [992 F.2d 1197, 1200, 26 USPQ2d 1600, 1603 (Fed. Cir. 1993)] because the notion that the written description fails to illuminate a credible operability can only be made, by not reading on the claims of this patent. However, it is below the standards of review to solely use cloth cut of other art because the invention (structure, operation and composition) is defined by the claims and the original specification. This leading away from the actual original specification and claims by the Office herald bias by the Office rather than proper application of the standards of review.

81. The Examiner's action are improper and unlawful, in violation of Newman v. Quigg [877 F.2d 1575, 1581, 11 USPQ2d 1340, 1345 (Fed. Cir. 1989)] because the Office derides the present invention with reference to cold fusion but, in fact, Claim 1 (and the other claims) is a method for a monitoring loading. Such (well-known) "boilerplate" attacks by the Office on the words "cold fusion" is well-known [confer Bass, Rotegard, and Mallove Declarations, and the Valone, Fox, and Mallove Amicus Curiae Briefs]. As the Amicus Curiae Brief of Eugene F. Mallove, Sc.D (Editor, New Energy Research Laboratory, NH) has stated,

> **"The most notable characteristic of the attack against the Swartz patent application at hand is its stale fixation with misrepresented events of 1989, its citation of erroneous reports, and its continued argument from supposed authority, rather than from evolved science and meticulous experiment."**

Fact 13 - The Office's Continual, Unmitigated Reliance on Cloth Cut of Other Art is Discriminatory

82. By perpetually invoking "F+P" and art cut of other cloth than the present invention, the Examiner and Office needlessly use a broad brush, apparently with tongue in cheek, to deliberately mislead away from the above-entitled invention. Such handwaving to other much less relevant art is not a fair or proper rebuttal. The present invention is NOT the work of Pons or Fleischmann, and so it is salient that this is done to confuse the issue, as the Examiner systematically deviates from the present invention and refers ONLY to other art, located far from the present invention.

Simply put, the Office's continual, unmitigated reliance on cloth cut of other art is discriminatory and targeting the Applicant.

83. The 35 U.S.C.§112,¶1 rejection is wrong because there is operability under, and compliance with, 35 U.S.C. 112, first paragraph. The specification provides an adequately written description of the invention and does adequately teach how to make and use the invention, thereby providing an enabling disclosure. The claims and specification do comply with the enablement requirement. The specification did contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and the Appellant (then Applicant) set forth the best mode contemplated by the inventor of carrying out his invention. The specification does contain subject matter which was described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Fact 14 - Reference to Art Cut of Cloth other than this Specification Should Dictate Allowance

84. The endless use by the Office of citing other people's art (F+P over and over) instead of the above-entitled invention is utterly wrong. Despite the innuendo and claims of the Examiner and the Office, for the above-entitled invention, cold fusion and excess heat are not even necessary. Appellant submits that if the Office must rely upon reference to art cut of a cloth other than this specification and claims, then their position must indeed be rather weak and should dictate allowance of the present invention.

THE OFFICE IS DISINGENUOUS REGARDING LANR/CF

85. The Examiner states,

"This concept of producing nuclear reactions by "cold fusion" was, in general, publicly announced by Fleischmann and Pons (hereinafter referred to as "F and P") .... this "cold fusion" concept of producing nuclear reactions is still no more than just an unproven concept ....many laboratories have attempted to confirm the results of F and P. .... results of these attempts at confirmation were primarily negative"

This statement by the Office is disingenuous in many ways.

1. CF/LANR is real, but is not needed for the above-entitled invention, although it works in that environment quite well, too.

2. F+P is not the above-entitled invention, and irrelevant criticism of F+P is unfairly thrown up by the Office even when rebutted by peer-reviewed publications and Declarations.

OFFICE IGNORES DECLARATIONS

86. The Dr. Ahern Declaration states,

"It is my professional as well as personal opinion that this field is real in spite of opinion of the Patent Office. The early lack of reproducibility combined with the unfortunate early claims of Pons and Fleischman have combined to discredit this entire area of investigation.

As the Prof. Hagelstein Declaration states,

"The scientific results presented by Dr. Mitchell Swartz on his Phusor experiments, in which excess power and total energy is measured, looks very good. His results are competitive in terms of reproducibility and power gain with the best results obtained by other groups around the world. The reproducible energy gains that he has reported are the highest so far reported by any group."

The Dr. Ahern Declaration states,

"I have known Mitchell Swartz since 1991. I would like to express my strong support for the work being conducted by Dr. Mitchell Swartz in the field of isotopic fuel loading of metal lattices and lattice assisted nuclear reactions. I believe his investigations are some of the most thorough and precise yet conducted in isotopic loading and lattice assisted nuclear reactions, and that the thermal effects he is observing are real and will ultimately be useful on a large scale."

87. Where is the Examiner's technical response? In fact, such widespread replications of cold fusion, and other developments in the field, have more evidentiary value then the few flawed "negative" reports cited by the Examiner. The facts dispute the erroneous rejection of all pending claims made by the Examiner pursuant to 35 U.S.C. 112, first paragraph, based upon the Examiner's incorrect -- and unfounded given the supplied Declarations -- opinion that the "environment" in which the above-entitled invention operates "does not exist". In contrast to the few "nay-sayers" the Office cites, and in contrast to the stale, biased (none refer to lattices and nuclear energy, even though Mossbauer effect proves they should have) books, papers, and newspapers to which the Office refers in its new argument, stand the facts and the Declarations which demonstrate the existence of these reactions, and even their generation of nuclear fusion products (such as helium-4), and the operability of the present invention. The positive results, the Declarations, and the peer-reviewed published literature have much more evidentiary value then the few "negative" less credible -- recycled and older -- reports cited by the Examiner. Therefore. the subject matter sought to be patented as defined by all pending claims have operability, and resides in a field which does exist and have utility.

LANR/CF EXISTS DESPITES THE USPTO'S EFFORTS

88. The Examiners' notion presented by the Office has been that lattice related nuclear reactions do not exist, and that there is no nuclear chemistry in deuterated palladium alloys. However, that is not true (confer Exhibit "E"). The Applicant disagrees. Declarants disagree. DTRA disagrees. DARPA disagrees. The US Navy disagrees. Thousands of scientists disagree. The literature supports the "existence" of the "cold fusion" effect(s). Lattice Assisted Nuclear Reactions (LANR), also known as Condensed Matter Nuclear State Physics (CMNS), and Solid State Nuclear Reactions, and Lattice Enabled Nuclear Reactions and Low Energy Nuclear Reactions (LENR) are real. Despite the determined flawed opinion of the Examiner, cold fusion in lattices is real.

89. There IS evidence that "lattice assisted nuclear reactions" [LANR] are real, and offer a clean, efficient potential new source of energy production (***). In 1989, most efforts failed because of flawed paradigms, cracked inactive palladium cathodes, contamination (including from ordinary water), and most often, improper cell configurations, inadequate or questionable loadings, and incubation times. The patterns of failure have been many and have been discussed in detail elsewhere [1,38]. Although, in 1989 the physics community did not believe the initial P-F experiments since fusion

was not known to occur at low temperatures or in solids. Today, the experimental facts rule. The initial failures, some which took years to understand, involved bad paradigms, questionable materials and loadings, but that is now resolved. Particle emission, excess energy, power gain, commensurate linked helium-4 production, increasing power gains and total energies achieved since 1989, all pave the way to an important, new, clean form of energy production: LANR.

(***) In the following brief review, the numbers in brackets [] refer to the references below. They all demonstrate the Office notion is wrong. The subject of cold fusion (LANR, LENR, CMNS, by whatever acronym for lattice assisted nuclear fusion) has drawn a reaction historically similar to treating baldness which was once considered by the Office to also to be an inherently unbelievable undertaking. See In re Ferens, 417 F.2d 1072, 1074, 163 USPQ 609, 611 (CCPA 1969); In re Oberwener, 115 F.2d 826, 829, 47 USPQ 455, 458 (CCPA 1940). However, since then, treatments for baldness have gained acceptance with minoxidil and other materials now recognized as effective in treating baldness.

90. Two decades of R&D, sub rosa, have investigated LANR phenomena ranging from excess heat production (far above the input), very low level but measurable emissions, thin films, and coupling to motors and electricity production systems. A few hundred credentialed scientists with diverse backgrounds continued to conduct careful experiments as they performed detailed data analyses using improved instrumentation, equipment, calibration, and controls. No single error or combination of errors on the part of all of the scientists can explain the developing results. They have been reported in over 3000 papers [55]. These two decades of LANR R&D have confirmed excess heat production, and other clearly nuclear phenomena, using electrolysis and other gas loading techniques. Requirements for success include incubation time, high loading of >90% PdDx, and other requisite conditions difficult to achieve. Several types of LANR now exist, as well as LANR metamaterials, and several types of triggering and control methods. In LANR, excess heat and helium-4 are the usual products, but charged particles, tritium, and the sequelae of neutrons can be sometimes detected. Excess power gains up to 200-400%+ have been reported. Given the prevalence of the fuel, and the incredible efficiency, LANR could be an important revolutionary technology. Lattice assisted nuclear reactions [LANR; refs. 1-44] enable deuterium fusion. It is incredibly clean and free of pollution, all toxic emissions, all carbon footprints, all greenhouse gases, and radioactivity, while obviating fossil fuel. The deuterium is plentiful in the oceans. But the problem with this new technology is that the first published LANR reaction involved the 1989 Pons-Fleischman (Drs. Martin Fleischmann (Southampton, UK) and Stanley Pons (Utah); P-F) experiment which was called "cold fusion" [1,2].

Before that, the term was originally introduced by Benjamin Franklin for fulgurites, created by atmospheric lightning discharging into sand. Rather than agglomerating sand, LANR's core is quite different, involving a metal, like palladium, loaded fully with heavy hydrogen [45-51], obtained either from deuterons from heavy water or gaseous deuterium.

91. The Office's indelibly proven-incorrect opinion that one of the "environments" in which the above-entitled invention operates "does not exist" is made on a leap of faith based upon flawed reference to other old art ("FP" or "F+P") while systematically ignoring Appellant's (then Applicant's) submitted Declarations of fact and accompanying Exhibits proving the Office wrong and disingenuous. The Office must eventually admit that, as in baldness control, the field discussed by the Office where the present invention can be used, does exist. Furthermore, corroborating that fact, the PTO has granted patents in this field, just as they are granted around the world. The continued discrimination against the Applicant is egregious because it is commonsense that the individuals in the scientific community who actually attend the Conferences in cold fusion are the same ones who evaluate its products and publications. This community as defined by the rules of the Office and by commonsense -- if it will be applied in this case -- verify the existence of the field. Publications show that growing numbers of the scientific community consider the positive results of cold fusion as being confirmed. Where is the Examiner's comment on any one which proves the statements of the Examiner are disingenuous. Said publications continue to this day, including (and each of which show the Office's opinion is flawed):

LANR IS CONVENTIONAL PHYSICS AND ENGINEERING

92. LANR is consistent with conventional physics. Cold fusion was only superficially investigated in March 1989. P-F announced that the "electrochemical experiments" they had conducted had produced more energy ("excess energy") than could be accounted for, either by input energy or by available chemical reactions. They speculated that nuclear reactions were involved. Attention was directed to CF which savaged its messengers for global sensation and to benefit special interests. Was there a substantive basis for this attack? Fusion had not been explored, and was not known to occur, at low temperatures or in solids in a lattice. High energy theoretical physics never involved a lattice in the nuclear calculations. And yet, in favor of LANR, this was not the first time a lattice was involved with coupling to nuclear effects. Mossbauer effects [52-54] preceded cold fusion, as were other physics and engineering calculations which would eventually prove cold fusion is consistent with physics. Although the Mossbauer effect involves nuclear decay, it also shows a coherent

momentum coupling to the lattice as a whole. The relevance to LANR is not the nuclear decay versus nuclear fusion, but the fact that the Mossbauer effect actually heralds one real existing case of nuclear lattice coupling. It is an example of a coherent linkage between the nuclei and electronic s-orbitals bathing them, coupling them to the entire solid state lattice. It demonstrates that the lattice is important in this branch of nuclear physics and must be considered, even if it was not previously.

The LANR-derived 'excess energy' begin at high energy, in the excited state of Helium, which is obtained from reactions between deuterons within the lattice. That helium-4 excited state is either the first excited state, or one energetically located above it, all at least 20 million electron volts (20 to ~23+ MeV) above the ground level. This is significant in magnitude and clearly not "low energy", as often (mis)claimed. As such purported "low energy nuclear reactions (LENR)" are a misnomer, a paradoxical description of what is actually not observed. Furthermore, if these reactions are "low energy reactions", then why even bother? Fortunately, they are high energy reactions.

93. Today, LANR research involves electrolytic (with solution resistance ranging from conventional to 'high impedance' devices in the range of 200,000 ohms), gas loading, gas permeation, ion beam and glow discharge loading techniques and devices. They run in both open and closed systems, at pressures up to 10,000 psi, and driving motors, with on-line monitoring, redundant, high precision, time-resolved semiquantitative calorimetry. What has been learned? That LANR is real and generated in one of three different sites within the solid state, deuteron-loaded, metallic palladium lattice [42. Each location has its own, differing, rate of excess heat, tritium, and helium production and appears to be linked to a different group of optimal operating point [OOP] manifolds characterizing active LANR samples and devices [39-44].

94. The fuel for LANR is the deuteron. It is driven into the metal by the applied electric field intensity or by gas pressure applied. In most cases, the product is an extraordinary amount of heat. Commensurate with the amount of excess heat is the "ash", usually de novo helium-4. The important point is that from those high energy levels of He4* made in LANR come the observed excess energies in those difficult-to-achieve loaded lattice conditions, under some conditions. These reactions are complex, and under some conditions, tritium and other emissions result. Some of the variety of regions involved both within, and upon, the metallic lattice is shown in Figure 1 [42]. Like hot fusion, the keys are containment, time, and density, but with flux substituted for temperature [43,44,37,1,56, for example]. This first key for LANR is that the PdDx alloy must be driven, usually electrically, to extremely high loading, until it is filled and almost bursting like a sponge with water. The electrode must accept and maintain

high loading for excess heat (>90%), for a sufficient incubation time, up to several hundred hours. Why? Vacancies must drift into the bulk from the surface, slightly facilitated by the loading itself [7, 56, 57, 58].

95. The additional keys for LANR are that there must be integrity of the loaded alloy; a condition difficult to achieve, although it is circumvented to some degree by the codeposition methods, albeit with their limitations [7,5]. As the lattice loads, it swells. Too much swelling yields irreversible failure, just like a swollen, burst, balloon. Another requirement is that deuteron flux must continue, within and through the already highly loaded lattice. LANR success is rewarded by "excess heat", which means that the energy producing reactions, have generated de novo helium into the lattice, (~1012 for every watt-second), and those conditions were adequate to enable energy transfer to the lattice. LANR success also means that significant energy (think, E=mc2 from the tiny difference between D2 and He4) is released rather than the low energy released by "burning" the deuterons into heavy water. There is more heat released than if the entire cathode were substituted for an equivalent quantity of TNT, but in this case it is safe, clean, and efficient.

SEVERAL TYPES OF LANR

96. The LANR method which P-F first taught in March 1989 had problems, including inefficient reproducibility, and a requirement for very high loading with long incubation time. This created havoc for those inexperienced in metallurgy, electrochemistry and physics. Today, briefly, there are several types of LANR; conventional (F+P), two types of codeposition (JET Energy, SPAWAR), dual cathode (Arata) systems, and a variety of other loading systems. On one hand, development for high power has led to today's high electrical solution resistivity LANR systems (very low levels of electrolysis yield superior excess heat levels pioneered by JET Energy) and then LANR metamaterials (JET Energy; 59). Metamaterials use shapes engineered to control deuteron flux, even at equilibrium, and even after loading, such as shown in Figure 2. The Phusor® spiral cathode system, with its open helical cylindrical geometry, in a high electrical resistance solution, creates a unique and unusual electric field distribution [59]. There is an anomalous effect in those portions of the cathode closest to the anode. This results in both deuteron loading flux from the solution to the electrode, and intra-palladium deuteron flux [59].

This configuration is a new kind of Pd/D2O/Pt and Pd/D2O/Au engineered LANR structure with impressive energy gain and fairly good reproducibility [4, 7, 10, 60]. These contain low paramagnetic content heavy water creating a unique, distinguishing electric field distribution quite different from customary wire-wire and plate-plate

systems. LANR metamaterials, and high loading systems (included those explored by IENA, Energetics) and metallurgically engineered electrodes (NRL, SPAWAR, JET Energy) all point the way to high output powers and efficiencies.

97. On the other hand, codeposition LANR systems (see '976) point the way to speedy onset for some of the reactions. Codeposition yields faster results without the prolonged incubation times. In codeposition systems, fresh Pd and D plate out together on the cathode. Highly expanded surfaces, nanoscale spherical nodules dominate on the growing surface. Cyclic voltammetry and galvanostatic pulsing experiments indicate, and excess heat measurements herald, that a high degree of deuterium loading (with an atomic ratio D/Pd>1) is obtained within seconds. The results to date indicate nuclear reactions which occur very near the surface of the electrode (within a few atomic layers). In the original JET Energy Pd/D codeposition process, working and counter electrodes are immersed in a solution of palladium solution with neither chloride nor lithium, deposited on palladium. In the SPAWAR Pd/D codeposition process, working and counter electrodes are immersed in a solution of palladium chloride and lithium chloride in deuterated water, deposited onto silver, gold, or copper. There are physical differences in the two types involving deep diffusion [5], where Pd is deposited either on palladium (like Dr. Swartz) or upon non-loading materials such as copper, gold, silver, or platinum (like SPAWAR).

98. SPAWAR and JET have investigated the physical changes, the excess heat generation, hot spots with calibration showing near and far IR emission (Figure 3). JET Energy's and SPAWARS (near- and medical IR imaging) have revealed that in LANR there are cathodic hot spots, and not just Joule heating in the solution (IR drop). The desired reactions producing excess energy yield localized hot spots (Szpak). The calibrated imaging of these localized hot spots, using an infrared camera, reveal non-thermal near-IR emissions correlated with excess heat (Swartz) in active LANR devices by in situ monitoring [ref. 11; Figure 3]. This discovered non-thermal IR (NT-NIR) is linked, and specific, to the presence of excess heat production and not their physical temperature. This confirms the Swartz-Verner hypothesis that in LANR, unlike hot fusion, Bremsstrahlung emission, under increasingly lower temperatures, shifts from penetrating ionizing radiation toward skin-depth-locked infra-red radiation [61].

LANR REACTIONS

99. In LANR, excess heat and helium4 are the usual products, but charged particles, tritium, and the sequelae of neutrons can be sometimes detected. Excess heat and helium production are the dominant reactions. Melvin Miles of China Lake with Johnson-Matthey Pd rods was the first to show the correlation of heat and helium-4 production. Arata and Zhang reported de novo He4 with LANR, including with Zr2O4/Pd powder exposed to deuterium gas, but not with hydrogen gas. Les Case (28; NH), using LANR with platinum group metals on carbon catalysts, reported He4 production from deuterium gas. As a result of these findings, but ignoring the impact of the lattice for the moment, the reaction is something like

$$D + D \text{ ----> } He4 + \sim 22 \text{ MeV (lattice)}$$

100. Energy and momentum are conserved in LANR [63,62,49], and because of the unique relationship to the lattice, the helium generated is moving slowly, at low velocity, very unlike hot fusion (discussed below). The He4 which appears is retained in the cathode, until very high temperatures (~850C). The peak energy is consistent with the relatively low energy, but penetrating, ionizing radiation. Miles (China Lake, USN) and M. Srinivasan (Bhabha Atomic Research Center, BARC) independently used dental x-ray films on the outside of his apparatus; they became fogged indicating low energy x-ray production. In rare conditions, tritium production has been seen. In India, M. Srinivasan from the (BARC) reported tritium in 1989. John Bockris (Texas A&M) reported tritium in bursts but the tritium was not accompanied by measurable heat, which he measured in other experiments. Szpak (SPAWAR) in open cells reported 3000 to 7000 atoms per second for a 24 hour period. Ed Storms (LANL) reported excess tritium in ten percent of his cells.

101. Some experiments have detected very low number neutrons and charged particles with short range. M. Srinivasan (BARC) reported neutrons in 1989. As the current increased beyond 100 amperes, neutron signals, in bursts, resulted in six of 11 cells. X.Z. Li (Tsinghua U) first used CR-39 in his 1990 Pd gas loading experiments to detect energetic charged particles [64]. CR-39 is a polyallydiglycol carbonate polymer, widely used as a time-integrating, solid state, nuclear track detector. Larry Forsley (JWK International) and Mosier-Boss (SPAWAR) have reported D-D and D-T possible reaction pathways capable of generating the observed charged particles, neutrons, etc. Their CR-39 tracks indicate possible neutron interactions, including carbon shattering. Some tracks herald D-D and DT reactions. Etching suggests uniformity in the 2-8 MeV range. The triple tracks, found in ~5-10 of their experiments, indicate energetic neutrons having shattered a carbon atom. Also observed in LANR systems are post

LANR mini-explosions, ionizing radiation, and neutron production, and tritium production. These observations of significant quantities of high energy charged particles, and emissions, in LANR systems, suggests that there is accumulating, near overwhelming, evidence that nuclear reactions in, and assisted by a lattice, are initiated at low energies.

EXCESS ENERGY OBSERVED IN LANR

102. P-F reported excess energies of 4 MJ (megajoules) in 80 hours. Similar amounts are seen in Figures 4 and 5. Several LANR devices show excess power gains from 25% to several times input electrical power, beyond the controls. High impedance LANR devices have shown power gains 200% to 400%, and one has yielded 8,000% power gain for a short time. JET Energy has shown that some electrodes, of specific shape, are metamaterials which produces excess heat of a superlative magnitude, successfully driving Stirling engines at the 1-19+ watt level [3,4,6,7,39,40,41]. In 2003, JET demonstrated a working LANR high impedance PHUSOR-type LANR systems for five days at MIT at ICCF10, producing ~230% excess energy at 1 to 2 watt level.

103. The most important point is that even if one were to replace the entire cathode with TNT, one would only get 1.2 KJ (kilojoules) on explosion. The excess energy observed with LANR is greater than any known chemical reaction. The second most important point is that the excess energy brings heat and changes wrought upon the electrode. SPAWAR, JWK, Stringham, Dash and others have reported volcano looking pits in electrodes. These induced pits are important for two reasons. First, these features require a lot of local heat to produce the focal melting of the Pd, require substantial energy expenditure in order to form, again consistent with a nuclear source, not chemical. Second, SPAWAR [12, 20, 22, 23], Mitsubishi Industries (Japan) [37], George Miley [U of Illinois, 65], and others have shown elements appearing only at these unusual sites, which are consistent with nuclear, possibly even fission, products, some of which could not be extracted from cell components.

Theories Involving Portions of LANR

104. Theories Involving Portions of LANR - It cannot be true that only one single "theory" will fit all the solid state, nuclear physics and requisite electrical engineering. They involve a complex non-linear, time-variant, system including an overloaded metal lattice, stirring with flux, and electrical currents involving both electrons and deuterons and their holes. In time, also formed are low dielectric constant layers appearing spontaneously in electrical series (bubbles). There are second order applied fields. This is in addition to the electric fields, magnetic fields, and electromagnetic fields including optical, terahertz and other irradiations, which LANR experimentalists use, which result from the drifting electrons, deuterons, and their holes. The bottom line is that no one theory can ever cover it all. Instead, there are several, and they fit conventional physics quite well [31,44,56,58,62, 63,69,70,71,72,73,74].

The quasi-one-dimensional (Q1D; 39-44) model of loading, based on continuum electromechanics, has led to the discoveries of optimal operating points and the key roles of D-flux, solution conductivity, and cathodic irradiation by laser in LANR systems. Recently, coupling this with Laplace's law has uncovered the need for deuteron flux within the palladium in an already highly loaded (D/Pd) LANR system. The Q1D models most important insight is that the first order D-flux equation, with the substitution of the Einstein relation, shows that the ability to load D depends on the ratio of ordering energy, (the applied electric field) to thermal disorder (kB*T) minus what goes up into the gas. The latter is perhaps most important because it reveals why so many have failed to generate successful LANR, because the name "fusion by electrolysis" is a misnomer.

MECHANISM OF LANR

105. How is fusion achieved? Are there 'expected products'? In hot fusion without a lattice, the kinetic energy of 23.8 MeV charged particles (alphas) yields ionizations, Pd knock-off atoms, low energy X-rays, and heat. Secondary neutrons [by D(alpha,n)] have a small cross-section. Most physicists are more aware of the ionization and X-ray production of D + D impact physics without a lattice. In this hotter fusion, the products are fast moving helium [23.8 MeV alpha-particles] which yield 22 keV Pd K shell X-rays and bremsstrahlung below ~4 keV. Conventional bremsstrahlung is ionizing penetrating radiation well-associated with hot fusion. In D + D impact physics without a lattice, neutrons and charged particles (fast moving helium ions, alpha particles) are seen.

In summary, in hot fusion, the production ratios are about 50% neutrons with He3, 50% tritium and a proton, and a tiny fraction (less than 1/1,000,000) as nuclear gamma rays. By incredible contrast, the production ratios observed for LANR reactions is mainly He4, and negligible He3, neutrons and gammas of very low energies.

106. Historically, since 1989, cold fusion was ignored, along with the scientific facts, generally speaking. The basic truth is that the temperature of cold fusion, lattice and the nuclear isospin control which products are observed. The physics in LANR appears conventional, but band energies, lattice and isospin issues, and temperature dependences must be addressed. First, not all emission branches from the excited state of He4* are even spin-available. The gamma emission branch from the excited state of He4* is actually spin-forbidden for both hot and cold fusion [62,63]. However, at higher hot fusion temperatures the restriction is lifted slightly. This is consistent to what is seen for both hot and cold fusion.

Second, the relative absence of neutron and hard gamma-ray penetrating radiation in cold fusion appears to be due to the lack of availability for two different, but thermally linked, reasons. The first thermally linked reason is that the only nuclear branches available are those whose band gaps are surmountable by the available activation energy (limited by the ambient temperature and incident radiation). The neutron emission branch is more than 1 MeV above the first excited state (He4*). Hot fusion has large activation energies available (it is 'hot'). LANR/CF is not. In LANR, given the actual much smaller amount of thermal energy, kB*T, available for cold fusion (~1/25 eV), absence of adequate activation energy decisively means that that branch is NOT available, as it is for hot fusion. Neutrons are not observed, helium 4 production is in its stead.

The second thermally linked reason is that in the analysis for LANR, with the explicit incorporation of temperature into the Bremsstrahlung equations, reveals that ionizing penetrating radiation by Bremsstrahlung is not expected at low temperature. The Bremsstrahlung shift (secondary to temperature and lattice availability) alters from what is expected at room temperature with the forward deposition of energy dropping by 18 orders of magnitude. Instead, at cold fusion temperatures, the penetrating ionizing radiation shifts to lower frequencies [to the near infrared (N-IR)] where the radiation is not longer ionizing, and where it is trapped in the palladium by the 'skin-depth' effect. In fact, this shift to near-IR was later observed (and reported) in LANR devices when they were operated at their OOP. The result is non-thermal near-IR emission [11].

107. It is the lattice which is key to the final products. It controls the de-excitations to produce He4 in the ground state if there is coupling to though phonons. In hot fusion, the lattice --and therefore the coupling-- are not there. In LANR/CF, the fast moving He4 (as charged particles, alphas) are not seen because the phonons, each about 35-43 millieV, help the He4* state shed ~20+ MeV to return to the He4 ground state [7, 71,57,38,58]. However, in a coherent lattice, if there are enough phonons to enable transfer in the nanoseconds required. Hence the "excess heat". Ergo, it is the lattice that opens up the new pathway. The many-spin, spin boson model [61,58] has led to discoveries of how exchange energy between oscillator quanta enable coherent energy exchange. One sine qua non is there be enough phonons (lattice vibrations) [7,71,75,57,38,58]. If they act coherently, and if there are enough Frenkel defects, then the lattice appears to be "oiled" enough for coherent energy transfer (this is from where the excess heat arises) from the very high energy nuclear state consisting of the nuclear helium excited state to the lattice [58,62,70,7]. The CAM (catastrophic active media [56]) theory models the unusual change in deuteron solubility that Pd demonstrates with temperature.

108. Much peer-reviewed literature, relevant to the present invention is available, and has been submitted to the Office, where it was removed from the file folder (as reported by Examiner Wasil, for example, and then ignored), including in Fusion Technology [e.g. Swartz, 1998, Improved Electrolytic Reactor Performance Using p-Notch System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85, dispute the Office. The chief product of the cold fusion reaction(s) is excess heat, but other released particles have also been reported {including tritium [Srinivasan, Current Science, 143 (1991); Storms, Fusion Technology, 17, 680 (1990)], sparse neutrons [Gozzi, J. Fusion Energy, 9, 241 (1990); Menlove, J. Fusion Energy, 9, 495 (1990)], helium-4 [Bush, J. Electro. Chem., 304, 271 (1991)], and possibly heavy elements [Matsumoto, Fusion Technology, 20, 323 (1991)]}]. The following is up to date information. The Examiner is referred to the Applicant's peer-reviewed article in the Journal of Scientific Exploration (Winter 2009, January 2010), "Survey of the Observed Excess Energy and Emissions In Lattice Assisted Nuclear Reactions".

The Literature Supports the Applicant

109. Where is the Examiner's Response to the more than 300 publications which the Applicant has sent the Office taken from peer-reviewed journals? This has been several hundred pounds of Exhibits, including over 40 of the Applicant's own peer-reviewed papers (several published by the American Nuclear Society, *Fusion Technology*)? Instead of a substantive response, in the new arguments made by the Office, there is ignoring of data, Exhibits, and Declarations, which the Applicant has supplied. The Exhibits constitute significant, growing reputable evidence of record which easily overcomes the few "negative" showings in the Office's ancient references, allegedly "disproving" the concept of "cold fusion". In contrast to the few "nay-sayers" the Office cites over and over, and in contrast to the "older" books, papers, and newspapers which cite failed experiments to which the Office refers to in its new argument, stand the Applicant's submitted original specification and supporting published papers, facts, Exhibits, and Declarations which demonstrate both the quality and quantity of corroborations of the existence of these reactions. Applicant's peer-reviewed published literature in series of published reports has more evidentiary value then the few "negative" less-credible recycled, older reports cited by the Examiner which do not even mention Applicant's work.

110. Where is the Examiner's Response to the fact that the U.S. Electric Power Research Institute (EPRI) has obtained positive results (Swartz 97A), as has NASA (Neidra 96A, Neidra 96B), the French atomic energy agency [confirming the cold fusion effect as originally reported by Dr. Fleischmann and Pons (Lonchampt 97)], and many US laboratories including US NAVY? Instead, the Office relies on its rebutted "reports" from "science" reporters and those competing for Federal funds, all of whom do not even refer to the present invention. Nor have they been sworn in, or have been proven to be an expert, as the Applicant has done with his Declarants.

111. Where is the Examiner's Response to Applicant's citation of Dr. Miles reports that near commensurate "ash" (i.e. order-of-magnitude expected amounts or greater) consistent with a nuclear process was found linking the formation of helium-4 to the excess heat using metal flasks which were used to capture the helium-4 linked to the excess heat [Miles (1993); also "US NAVY CONTINUES POSITIVE EFFORTS SUPPORTING COLD FUSION"; COLD FUSION TIMES (pages 1-2) volume 1, number 4 (1994)]?

> **"Our previous results present a correlation between the measured excess power and helium production in D_2O-LiOD electrolysis cells using palladium cathodes. The measured rate of ^4He production (10^{11}-10^{12} $^4He/s*W$) is the correct magnitude for typical deuteron fusion reactions that yield helium as a**

product. *** Metal flasks were used to collect the electrolysis gas samples in order to minimize atmospheric contamination due to helium diffusion through glass. The helium concentrations in Table II support a detection limit of approximately 10^{13} ^{4}He/500 mL in these experiments as reported previously. Mean values for the measured helium concentrations in these control experiments are 4.4 +/-0.6 ppb or 5.1 +/-0.7 x 10^{13} ^{4}He/500 mL. ... For experiments producing excess power, five helium measurements using these same metal flasks have been completed. These experiments yield a mean value of 2.0 +/-0.5 x 10^{11} ^{4}He/s*W after correcting for background levels of helium measured in control studies (Table II). This value is once again the correct magnitude for typical deuteron fusion reactions that yield ^{4}He as a product."**

["HEAT AND HELIUM MEASUREMENTS IN DEUTERATED PALLADIUM"; M. M. Miles and B. F. Bush, Chemistry Division, Naval Air Warfare Center Weapons Division China Lake, CA USA (12/1993)]

112. Where is the Examiner's Response to Applicant's citation of confirmations of Dr. Miles' nuclear (helium-4) findings? Excess heat, tritium generation, and other products, produced by the desired reactions, have been found by scores of groups supporting Applicant's claims at the time these patent applications were filed. The reactions products (particles and excess energy) have been elicited both by the electro-deposition of deuterons onto palladium cathodes and by temperature cycling of deuterided palladium or titanium. Many of the laboratories publishing such results are listed in a table in Dr. Mallove's book on pages 246 through 248. The chief product of the cold fusion reaction(s) is excess heat [Mills 91, 94; Mizuno 96D; Storms 93; Arata 90; Swartz 97B; Mizuno 96D; Celani 96A; Storms 96A; Pons 90; Notoya 93; Fleischmann 89, 90; Mallove (Fire from Ice); Lonchampt 96, 97; Oriani 96; Mizuno 94; Bockris 90; Szpak 91B, 96A; McKubre 91; Will 91; Nobel 95 and Miles 94C, 96B], but other released particles have also been reported {including tritium [Srinivasan, Current Science, 143 (1991); Chene 90; Rout 91; Storms, Fusion Technology, 17, 680 (1990); also Notoya 94A, 94B; Will 93, 94; Claytor 96A, 96B], sparse neutrons [Gozzi, J. Fusion Energy, 9, 241 (1990); Menlove, J. Fusion Energy, 9, 495 (1990); also Gozzi 90A, 90B; Ogawa 96; Perfetti 89; Wada 89; Bittner 91; Celani 97], other particles [Karabut 92; Chambers 91; Taniguchi 89; Iwamura 94], helium-4 [Bush, J. Electro. Chem., 304, 271 (1991); also Miles 94C, Miles 91, 93B, 94C, 96B; Bush 96], some radiation [Szpak 96B; Celani (90)], and possibly heavy elements [Matsumoto, Fusion Technology, 20, 323 (1991), Karabut (92)) Matsumoto 92; also Ohmori 96A, 96B; Savvatimoa 94, 95; Mizuno 96A, 96B, 96C; Miles 96C, 97A; Miley 96]}.

113. The reports of these products support the incontrovertibility of this new nuclear technology. The Examiner's own witness, Dr. Will demonstrated tritium production ["Reproducible tritium generation in electrochemical cells employing palladium cathodes with high deuterium loading, J. Electroanal. Chem 360 (1993) 161-176; confer also Will 1994]. Swartz (96B) describes several other reports of tritium production. Thus, based upon the above-discussed inadequacies of the art cited by the examiner, and most importantly based upon the growing abundance of "positive" more-recent literature there is evidence of fusion in a material using isotopic fuel.

114. Where is the Examiner's Response to literature supporting the measured products of the cold fusion reaction(s) including excess heat, but other released particles have also been reported {including tritium [Srinivasan, Current Science, 143 (1991); Storms, Fusion Technology, 17, 680 (1990)], sparse neutrons [Gozzi, J. Fusion Energy, 9, 241 (1990); Menlove, J. Fusion Energy, 9, 495 (1990)], helium-4 [Bush, J. Electro. Chem., 304, 271 (1991)], and possibly heavy elements [Matsumoto, Fusion Technology, 20, 323 (1991)]}? Where is the Examiner's Response to Swartz(92), Swartz(94A), Swartz (97A) and Swartz(99), but also Mallove pp246-248, Storms(90,93); Arata(90); Celani(90); Pons(90); Bockris(90); Szpak(91B); McKubre(91); W l(91,93,94), Miles(94C,91,93B,94C); and McKubre, SRI ["Summary During ICCF-7", Infinite Energy, 4, 20, pp.34-35, (1998)]? Where is the Examiner's Response to (Hagelstein 93B), Storms (94C); Huggins 94, Savvatimova (94), McKubre (95), Itoh (95), Biberian (95), and Nobel (95), Kamimura (96), Lonchampt (6), Li (96A), Mizuno (96B), Kamimura (96); Miles (96C), Oriani (96), Claytor (96A), Celani (96B), Swartz 96B, Swartz 96A, Fox 96A, and Rothwell (96)? The vast number of papers in this field corroborates both the "existence" and the "utility" of these teachings.

The Examiners Have Added New Material After FINAL

115. The Examiner states,

"From an a priori point of view, and according to standard theory, negligible fusion reactions are expected under condensed matter conditions in ion-electron systems, as is demonstrated by the standard literature on the required relative velocity of ions to fuse ordained by the Coulomb penetration barrier (see, e.g., D. Bohm, Quantum Theory", pages 271 -280) and the expectation of many orders of magnitude higher temperature before observing significant fusion reactions (see, e.g., Artsimovich, pp. 1-16, especially page 4). "as witnessed, for instance, by Brudanin et al, in a publication in Physics Letters A, volume 146, no. 6, pages 347-350 (April 1990), by D. Morrison, in a "Review of Cold Fusion", Soy. Phys. Usp. 34(12), December 1991, pp. 1055-1060; and by Price et al in "Search for

Energetic-Charged-Particle Emission from Deuterated Ti and Pd Foils", Physical Review Letters 63(18), pp. 1926-1 929 (1989). "

The Applicant thanks the Examiner for the reference which the Applicant has never seen before, however, the Examiner's objection is flawed as there are several problems with the Examiner's arguments.

First, the cited art fails to describe THIS invention.

Second, the Examiner presumes that THIS inventions is the same as used by Drs. Fleischmann and Pons (hereinafter F+P).

Third, the field of cold fusion (also known as LANR, LENR, and CMNS) is real, and some systems such as the above-entitled invention DO have operability and utility.

Fourth, the technoology taught by the present invention works, and therefore has operability and utility - and cold fusion is not even needed as discussed above.

Fifth, as the Applicant demonstrated in the original specification there are ways around the coulomb barrier.

Sixth, parts of some of the Applicant's inventions have now appeared in papers by Rossi, and Widom and Larsen, and others and it is not fair for some in the office to give parts of the invention to others who filed AFTER the Applicant for reasons as yet unclear.

Seventh, the "standard theory "does not even mention the lattice, which the Applicant has proven to be important.

Eighth, the publications submitted by the Applicant (and again ignored by the Examiner) also show that growing numbers of the scientific community consider the positive results of cold fusion as being confirmed. That includes DTRA, DARPA, and the US Navy. The ignored submitted Exhibits show widespread replications of cold fusion. They also report other developments in the field including by the Applicant. Where is the Examiner's comment to the hundreds of submitted publications previously submitted, and many now resubmitted, proving that the Office is very wrong? Where is the Examiner's technical response? Why is it that he accepts negative viewpoints immediately, but dismisses each and every opposing viewpoint?

Each of these points has been addressed below (and above).

FACTS SYSTEMATICALLY IGNORED BY THE OFFICE AND EXAMINER

═══ ERROR BY EXAMINER REGARDING DOE REPORT

116. The Examiner states,

"A Review by the United Stated Department of Energy in 1989 solidified the conclusion of lack of reproducibility and credibility. ...
However, a Report by the United Stated Department of Energy, entitled "Report of the Review of Low Energy Nuclear Reactions" dated December 1, 2004, 50 pp., and containing 18 reviews by peers in the related fields of physics and chemistry states that "the conclusions reached by the reviewers today are similar to those found in the 1989 review) (see page 5). The reviewers extensively examined low energy nuclear reactions generally, but in particular the one that is the topic of the specification, i.e., deuterium-loaded solids such as palladium and titanium."

The Examiner is inaccurate. First, the evidence (papers and Declarations) demonstrate the existence of lattice assisted nuclear reactions (LANR, also called LENR, cold fusion, and CMNS) and their products (such as helium-4). The problem for the Office is that their previous citations now support LANR. The two decades of positive results, the Declarations, and the peer-reviewed published literature have much more evidentiary value then the few "negative" less credible -- recycled and older -- reports cited by the Examiner about art cut of different cloth than the present invention. Therefore, the subject matter sought to be patented as defined by all pending claims have operability, and resides in a field which does exist and has utility. As the Hagelstein Declaration states,

"Today, D/Pd loading is known to be very important. There have been numerous peer-reviewed published papers that show positive excess heat results in replications of the Fleischmann-Pons experiment. If the USPTO have asserted otherwise, they are simply mistaken."

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117. Second, cold fusion is not required for the present invention. On information and belief, it is a 'straw man' argument followed endlessly by the Examiner to keep the Appellant's invention from the American people, as some in the US Patent Office transfer the technology overseas.

118. Third, the Office misstates what the DOE reported - and the Applicant was not there, was asked for, would have liked to have been there, and had just demonstrated his demonstation unit openly at MIT for a week a few months before. The second DOE panel has confirmed cold fusion. In summary,

".....eighteen anonymous DOE reviewers "split approximately evenly" on whether or not there is excess power observed in the cold fusion phenomena. That is a great change since the 1989 ERAB report.

.... more than 3000 scientific papers and hundreds of researchers have expanded the field enormously. Second, in the USA most researchers are self-funded. ...

"Just the fact of the review has heightened the level of discussion. There's been a huge upswing in interest in funding cold fusion research." Adds MIT theorist Peter Hagelstein, "A door has been opened by the reviewers."

[Cold Fusion Times volume 12, number 2]

From DOE report itself:

"DOE Conclusions: Reviewers identified two areas where additional research could address specific issues. One is the investigation of the properties of deuterated metals including possible effects of alloying and dislocations. These studies should take advantage of the modern tools for material characterization. A second area of investigation is the use of state-of-the-art apparatus and techniques to search for fusion events in thin deuterated foils. The reviewers believed that this field would benefit from the peer-review processes associated with proposal submission to agencies and paper submission to archival journals."

[Cold Fusion Times volume 12, number 2]

119. More proof the Examiner is wrong, is from the second DOE report itself, which recommended MORE RESEARCH.

"DOE's Office of Science released a report on December 1st that examined the results of roughly 15 years of experiments dealing with low-temperature nuclear reactions, commonly known as cold fusion. In 1989, researchers B. Stanley Pons and Martin Fleischman announced that a palladium electrochemical cell had generated heat from an unknown source, which they postulated was a low-temperature fusion reaction. Later that year, a review by DOE's Energy Research Advisory Board recommended against establishing DOE programs devoted to the science of cold fusion, but supported the funding of peer-reviewed experiments for further investigations. Since 1989, research programs in cold fusion have been supported by various universities, private industry, and government agencies in several countries. In late 2003, a team of researchers approached DOE and requested another review of the experimental results to date. Their report, submitted to DOE in July, found experimental evidence for a physical effect that produces heat, the production of helium 4 (the product of fusing two nuclei of deuterium, which is a hydrogen nucleus with an added neutron), and the emission of high-energy particles. DOE, in turn, solicited comments from nine scientists, then held a one-day review of the material with another nine scientists. Reviewing the evidence for the production of excess heat and fusion products, two-thirds of DOE's reviewers did not feel the evidence was conclusive. Most reviewers also indicated that the evidence did not conclusively demonstrate the occurrence of cold fusion. In the final analysis, the reviewers were inconclusive about cold fusion's existence, and they recommended specific avenues for new research to resolve the uncertainties in the previous research results."

[Cold Fusion Times volume 12, number 2]

120. More proof the the Examiner is wrong is from Research Day from the US government:

"More CF research needed DoE finds - Since the Department of Energy's last review of cold fusion 15 years ago, significant progress has been made in the sophistication of calorimeters—tools that measure the heat generated by a chemical reaction, change of state, or formation of a solution—yet a new review by the department says the evidence is still uncertain. In late 2003, DoE's Office of Science was asked by a group of scientists to revisit the scientific evidence for low energy nuclear reactions. In total, DoE received comments on cold fusion research from 18 individual scientist reviewers, and two-thirds of them did not feel the evidence was conclusive for low energy nuclear reactions, one found the evidence convincing, and the remainder indicated they were somewhat convinced. Specifically, several reviewers noted that poor experiment design, documentation, background control and other similar issues complicated the results presented. Cold fusion is defined as the theory that energy can be created by running electrical current through water. Above all, the scientists identified a need for further research in the field of low energy nuclear reactions. "The nearly unanimous opinion of the reviewers was that funding agencies should entertain individual, well-designed proposals for experiments that address specific scientific issues relevant to the question of whether or not there is anomalous energy production in Pd/D systems, or whether or not D-D fusion reactions occur at energies on the order of a few eV," the DoE report concludes. "These proposals should meet accepted scientific standards, and undergo the rigors of peer review." In terms of specific basic science research areas that need further elucidation, the reviewers identified material science aspects of deuterated metals using modern characterization techniques, and the study of particles reportedly emitted from deuterated foils using state-of-the-art apparatus and methods. "The reviewers believed that this field would benefit from the peer-review processes associated with proposal submission to agencies and paper submission to archival journals," DoE explains."

[Research Day, reported in Cold Fusion Times volume 12, number 2]

It can be seen again that the Office is wrong.

=== ERROR BY EXAMINER REGARDING REPRODUCIBILITY

121. The Office has in the past cited alleged lack of "reproducibility". The Office purports non-"reproducibility" of these phenomena, as a "reason" for rejection. However, there are several errors with this logic and new argument. First, the Examiner's and his cited art's arguments are clouded by the two different meanings of the word(s) "(not) reproducible". In the parlance of the Office, when referring to "cold fusion", the word(s) "(not) reproducible" are a euphemism for "wrong". When used more generally, however, these words can even apply to scientific (and medical) fields which actually do engender respect and/or validity, and where "reproducible" only

refers to the number of samples in a cohort developing the desired effect. The restriction that the Office creates using the word "reproducible" in the present case would obviously create unreasonable hurdles for inventors in such fields as cancer treatment, meteorology, or the sciences of earthquakes, lightning, sunspots, or solar storms.

The Ahern Declaration states,

> **"In 1987 I was charged with the duty to survey the field of the new superconduc-tors which were at first a great shock to experts in the field. I was selected for this work in part dues do to my M.S. thesis in the field of low temperature Physics. It is merely coincidental that my thesis topic was based on loading palladium alloys with hydrogen and deuterium and measuring the supercon-ducting transition temperatures. My two year survey concluded that the theo-retical underpinnings of superconduction were sadly lacking. The BCS theory was not only incapable of predicting the occurrence of the YBCO materials, it was incapable of making a priori predictions for any arrangement of matter. This observation regarding the lack of understanding in low temperature phys-ics is not widely known. This lack of first principles level of understanding has been of little concern to experimentalists and has not discouraged extensive re-search support."**

122. Second, despite the erroneous logic of the office, radiation therapy accounts for the cure of more than 60% of adults afflicted with solid tumors composed of malignant disease, and obtunds the pain in 80% (or more) of patients treated palliatively, there is almost always a clinical effectiveness. Yet it is not possible to know in advance which patients are going to be cured nor is it necessarily reproducible in any single patient. Thus there is clinical proof and utility, despite the lack of reproducibility in any single individual or cohort of patients. Thus, the claim that "reproducibility" must necessarily be absolute for there to be "utility" is also simply not true. Would the Examiner withhold curative treatment of a patient --of their own family member-- because such therapy is not "reproducible"? In summary, if the Office throws out cold fusion patent applications because there is not 100% reproducibility for each experiment, then probably all of the pharmaceutical and biomedical device patents should, for similar reasons, be voided *nunc pro tunc*.

=== ERROR BY EXAMINER REGARDING CITED ART, IN GENERAL

123. The cited art supplied by the Office was outdated when it was sent, was never peer-reviewed, is not relevant, and some even has flaws. Such rebutted, stale newspapers and essentially amateur-level reports have poor quality and cannot disprove the evidence the Applicant has presented regarding operability or utility. Several of the Examiner's references are flawed for reasons previously submitted by the Applicant, as discussed by the Applicant in the previous communication. Said so-called "negative" experiment papers from 1990-1991 contain serious errors and their errors are echoed thereafter in the Office's cited art (Huizenga, Taubes, and Jones). Simply put, these experiments were not done well and were contested in the peer-reviewed literature. Lewis, Miskelly, and Hilts have been and remain contested by scientists in published peer-reviewed literature (Miles 94B, Noninski 91, Noninski 93) and other art (Mallove 91, Milton 96). Most of the periodicals and newspapers cited by the examiner involve merely quoting the so-called "negative results" of others, either Alibagli (eg. Hilts) or Lewis et alia (Hilts, Browne), even though they remain validly contested and, therefore, they must be weighed accordingly. Furthermore, the Applicant's inventions surmount the problems so criticized therein, and these issues have been discussed in the applicant's peer-reviewed published papers, and in the Applicant's other patent applications [*vide infra*]. Applicant has already addressed the errors of Huizenga, Jones, Morrison, Miller, etc. previously with solid substantive response, including in Federal Court [A316-317,A321].

124. The applicant respectfully notes that there are many problems with reliance upon newspapers. First, examples of the failure of "headlines" to be fair representative appraisals of new technology include the following:

> **"... after a few more flashes in the pan, we shall hear very little more of Edison or his electric lamp. Every claim he makes has been tested and proved impracticable."**
> [New York Times, January 16, 1880]

Second, the paper [from 1989] cited {Stiff} reported possibly negative results in the Wall Street Journal. However recent issues from the very same Journal now report positive results (cf. Bishop). In the New York Times there has been a similar shift in position. The issue of November 17, 1992 {Pollack} demonstrates the reported positive results. See also Freedman (in Science), Dagani (Chemical and Engineering News), Chandler (Boston Globe), Schlesinger, Port, as well.

125. The papers cited by the Examiner are just plain wrong. Even the very newspapers which the Examiner has cited now publish updates which herald that there is increasing acceptance of, interest in, and growth of this field [cf. Freedman (Science 4/24/92), Chandler (Boston Globe 4/17/92)]. As a result, it is reported that scientists are "quite convinced that there is a source of heat" [Prof. Philip Morrison as reported in Chandler] and are "not concerned about the lack of neutrons (expected in a conventional) fusion reaction" [Prof. Louis Smullin as reported in Freedman]. Dagani (1992) now reports that growing numbers of the scientific community do take seriously the "excess heat". See also Chandler, Freedman, Bishop.

126. Several of the papers cited by the examiner are theoretical. Some of these "negative theoretical" citations calculate, using what may be incorrect or false assumptions and approximations, that fusion of isotopic fuel in a material, ie. cold fusion, can not "work" (eg. Ohashi, Cribier, Chapline). This is inaccurate. The applicant respectfully asks the examiner to reconsider, because in actual fact such calculations were historically presented "proving" that heavier-than-air ships (ie. airplanes) "cannot fly". As another example: such calculations only created a virtual "drag" to the innovation of ideas, and their development and implementation, involving airships - which later evolved to include jets and spacecraft.

"Professor Goddard ... does not know the relation of action to reaction ... he only seems to lack the knowledge ladled out daily in our high schools"
[New York Times, January 13, 1920]

127. The Examner is directed to the Office's citation of the NCFI report, and attention is now closely drawn to comments therein.

"Cold fusion work continues in many countries ... The occurrence of nuclear reactions in deuterium-loaded solids, such as palladium and titanium can no longer be reasonably denied. ... Several government laboratories are continuing their work on cold fusion, among them most notably are Los Alamos National Laboratories, The Naval Research Laboratory, The Naval Underwater Systems Command and The Naval Weapons Center. Significant positive results have been obtained in each of these laboratories. ... Over 100 groups from more than 12 countries have now reported on various types of evidence for the occurrence of nuclear reactions in deuterium-loaded metals or compounds."
[F. Will; Final Report National Cold Fusion Inst. (1991)]

NCFI efforts in-house in fact did support the existence of, and significant investment in, the "cold fusion" phenomena. The NCFI Report documented widespread examination of these phenomena.

128. In an attempt to support the unfair rejection, the Examiner cites other art including very less relevant experimental and theoretical papers, and also some columns from periodicals and newspapers. Of said art, most are from 1989. In fact, the cited art failed because they failed to measure loading, which is what the present invention is all about.

As the Hagelstein Declaration states,

"I note that it becomes exponentially more difficult to achieve high D/Pd load-ings above a loading of 0.70 near room temperature (due to the rapid increase in deuterium chemical potential). Hence, the achievement of a loading of 0.95 in the majority of replication experiments in 1989 and 1990, where no special effort was made to achieve high loading, and where the loading was not even measured in most of these experiments cited by the USPTO, would not be ex-pected. The existence of such a requirement was not appreciated in 1989, ex-cept by Fleischmann, Pons, and a small number of other researchers."

"The USPTO continues the tradition of assigning significance to these negative experiments, which were not done in the relevant parameter regime of high D/Pd loading. Thus, rather than showing that the Fleischmann-Pons experi-ment could not be replicated, these insufficiently loaded experiments should be understood as producing the expected negative result (no excess power) in those regimes where we would expect no excess power to be seen."

=== ERROR BY EXAMINER REGARDING THE PURPORTED ABSENCE OF EVIDENCE

129. Several of the Office's references cited by the Examiner involve so-called purported "negative" results in that no large numbers of neutrons were observed. However, neutron emission is not expected in large amounts with these reactions (*vide infra*). Because the actual generation of neutrons is so unlikely, the absence of neutrons can not be inferred to indicate the absence of any other reaction or reactions. The absence of neutrons is not the evidence of the absence of fusion of isotopic fuels in a material.

Furthermore, not all of the art cited by the Examiner is "negative" with respect to neutrons as the Office purports. Actual "positive" evidence noted by the Examiner includes Rehn, Shani (who did monitor stimulated neutron radiation from deuterated materials after said deuterated materials were neutron-irradiated), and Faller (who did report a tritium increase). Thus, the Office's art, Rehn, Will, Shani, Faller, and others, cited by the Office, support the existence of the field.

=== ERROR BY EXAMINER REGARDING HILTS, ALIBAGLI, MIT

130. The Office has in the past cited Hilts. Applicant respectfully notes that this was discussed extensively in the previous Communication with the Examiner including page 67. The Examiner cites Alibagli whose "report" contains proven fraud as the Examiner ignores the US Navy, the US Air Force, NASA, RLE, the American Nuclear Society. It is inconsistent with Federal requirements of truth and accuracy that the Examiner again relies upon and give authority to papers which now have been shown to have major errors or have proven fraud. Several additional peer-reviewed publications (including Fusion Technology and J. Electroanal. Chem) have exposed many significant flaws in the cited so-called "negative" papers upon which the Office leans on. For example, independent analyses (Noninski, cf. also Mallove) indicate that the experiments of the Massachusetts Institute of Technology [MIT] and Lewis -- despite reported apparently "negative result" may have actually demonstrated excess heat in their experiments which utilized heavy water. Based upon his research, Noninski (93; 91B) has dismissed the references of Lewis, Miskelly, and those which cite early 1989 experiments at MIT's Plasma Fusion Center upon which the Examiner has so staunchly relied.

> **"Although much discussion was (and is still) devoted to whether ("cold fusion") is connected with any known nuclear reactions, the latter being widely questioned, there is no doubt that the general interest in the problem was provoked by the claim of the possibility of producing excess energy, i.e., energy surmounting the energy break-even value. Unlike the clearly negative indications so far in terms of known nuclear processes taking place, however, careful analysis reveals that the claims in the principal negative papers published so far with respect to the existence of excess energy are in disagreement with the raw experimental data whenever such is presented in those papers. This is very surprising indeed in view of the wide publicity these negative results have been given. An example of an improper analysis of their own experimental data by the authors is Ref. 1 (MIT Plasma Fusion Center Paper, Alibagli et alia), which we have already discussed. (ref. 2) Other examples of inappropriate method and improper interpretation of their own experimental data are (Lewis et alia) and (Miskelly et alia)."**
>
> [V. Noninski, Fusion Technology, vol. 23, pages 474-476 (1993).; "NOTES ON TWO PAPERS CLAIMING NO EVIDENCE FOR THE EXISTENCE OF EXCESS ENERGY DURING THE ELECTROLYSIS OF 0.1 M LiOD /D2O WITH PALLADIUM CATHODES"]

131. The Office has in the past cited Alibagli. Applicant's evidence which was timely and repeatedly submitted to the Office [and the Board, including in the Federal Appellate case, including regarding '457 in the Appendix therein at A203-204, A244,A278-A279, A353-355, A367-A370, A391, and especially A368], then Applicant requests and explanation for the violation of USC 1001 because the Office does once again make knowingly disingenuous false statements known to be false a priori [Niehot'f v. Sahagian, 103 A.2d 211 (Me. 1954)]. This is a breach of duty [Rannard v. Lockheed Aircraft Corp., 26 Cal. 2d 149 (1945), 18 U.S.C.§1503]. The Office communication is thus in error [People v. Pierce, 66 Cal. 2d 53 (1967); U.S.v. Price, 86 S. Ct. 1152, 1157, footnote 7; Sawtelle v. Farrell, 70 F.3d 1381, 1387 (1st Cir. 1995); Leasco Data Processing Equip. Corp. v. Maxwell, 468 F.2d 1326 (2d Cir. 1972); Pizarro v. Hotels Concorde Int'l, C.A., 907 F.2d 1256 (1st Cir. 1990); Peckham v. Continental Casualty Ins. Co., 895 F.2d 830, 836 (1st Cir. 1990); Donatelli v. National Hockey League, 893 F.2 459, 465 (1st Cir. 1990)].

132. Furthermore, some of the relied upon references cited by the Examiner are, or quote, "negative" results [eg. Browne, Lewis, Miskelly, Hilts - for example] which have been contested. Attention is drawn to the fact that most of the periodicals and newspapers cited by the examiner involve merely quoting the so-called "negative results" of others, either the Massachusetts Institute of Technology [MIT] (eg. Hilts) or Lewis et alia (Hilts, Browne). Given that the reference articles may be flawed, the additional tabloids referring to such obviously must be weighed accordingly, and are more than balanced by Bishop, Pollack, Schlesinger, Port, Chandler, and Freedman.

=== ERROR BY EXAMINER REGARDING BOSCH, BALKE, ROGERS

133. The Office in the past has cited Bosch et al, Balke et al, Fleming et al, Rogers. However, Bosch, who unseriously claims to be the "Bavarian Bubble Bottle Team"), purportedly attempted to repeat the initial F+P experiment. Because the sensitivity of their system is 300 milliwatts (page 165), it is unlikely they would have been able to detect the expected signal with their calorimetry which was circa 65 milliwatts excess heat. Bosch measured neutrons which are not produced (discussed elsewhere). The cited arts have loadings which are insufficient. The Bosch cathode had a loading of less than 0.67, and that did not include correction for other depositions of other materials into or upon the cathode (page 172). This loading is now known to be too low (Swartz 97A) The "negative" results may be, in part, due to inadequate loading (Swartz 07/339,976), and/or the failure to monitor said loading of isotopic fuel (Swartz, (07/371,937**), and/or to activate the loaded quantity of isotopic fuel in various ways (Swartz 07/339,976, Swartz 07/371,937** and Swartz 07/760,970**), and/or to drive

at the right location (Swartz SN 08/406,457 [filed March 20, 1995]. As taught in Swartz 07/339,976, palladium must fill with, and thus physically absorb within it, enough deuterium to obtain the desired reactions.

Balke teaches a less relevant gas system which loaded palladium and titanium. The other references use neutrons. Rogers is a theoretical paper because some of the conclusions in Rogers are not inconsistent with cold fusion. For example, on page 484, Rogers discusses that gamma emission from the excited helium state is not allowed. This is generally correct except at very elevated temperatures (like hot fusion).

=== ERROR BY EXAMINER REGARDING SPECIAL RELATIVITY

134. The Office has in the past cited Dick Blue, the Schrodinger equation, and "the time scale for the transition process". Dr. Blue got it wrong, and the Applicant, Dr. Swartz, did fully completely, and accurately correct him in the peer-reviewed journal of the American nuclear society [Phusons in Nuclear Reactions in Solids", Fusion Technology, 31, 228-236 (1997)]. Dr. Blue appears to have incorrectly derived the Schrodinger equation using "energy" rather than "the uncertainty in the energy". As the Examiner knows, the Schrodinger equation involves the relationship between either the uncertainties of mass and momentum or the uncertainties energy and time. In the case being discussed, the latter was invoked by Dr. Blue. As the Examiner knows, the product of the uncertainties is on the order of the number, called h-bar. Dr. Blue's error directly results from his use of the energy (E) rather than the uncertainty of energy (Delta-E.). This common error of those without adequate scientific eduation is discussed in significant detail in the Applicant's published paper "Phusons in Nuclear Reactions in Solids", Fusion Technology, 31, 228-236 (1997). Attention is directed to the section discussing special relativity therein where this matter is definitively and correctly discussed (after peer-review).

=== ERROR BY EXAMINER REGARDING BROAD, DAGANI

135. The Examiner has not explained why he unduly relies upon non peer-reviewed periodicals and books which do not discuss Applicant's invention as he ignores the submitted evidence of the Applicant regarding operability or utility.

The Examiner has not explained why he has ignored, and did not discuss, so many of Applicant's arguments in this matter. First, perhaps to promote sales of the newspapers, the Office quotes "headline" events without any substantial data being presented. And it is important to note that some "headlines" are simply wrong.

Second, such "headlines", as opposed to the peer-reviewed articles cited by the Applicant in Fusion Technology, are <u>not</u> fair representative appraisals of new technologies.

Third, this is another case where the Office again takes selected, functionally "old" and out-of-date, biased excerpts to attempt to prove its "point". However, the very newspapers which the Examiner has cited now publish updates which herald that there is increasing acceptance of, interest in, and growth of this field [cf. Freedman (Science 4/24/92), Chandler (Boston Globe 4/17/92)], indicating its maturity even then. As a result, it is reported that scientists are "quite convinced that there is a source of heat" [Prof. Philip Morrison as reported in Chandler] and are "not concerned about the lack of neutrons (expected in a conventional) fusion reaction" [Prof. Louis Smullin as reported in Freedman]. Dagani (1992) now reports that growing numbers of the scientific community do take seriously the "excess heat". See also Chandler, Freedman, Bishop.

136. Fourth, the Office cites old (~1991) articles, but there are many periodicals -- more recent -- which do support this field including the Wall Street Journal (Bishop (92); Bishop (93), Bishop (96)), New York Times (November 17, 1992, Pollack, and especially Clarke 1997). There are many periodicals which do support this field including the Wall Street Journal (Bishop (92); Bishop (93), Bishop (96)), New York Times (November 17, 1992, Pollack, and especially Clarke 1997). The Examiner should note that the Applicant has now supplemented these with even more references.

137. The Examiner has not explained why he unduly relies upon irrelevant papers which are totally theoretical. Some of these "negative theoretical" citations calculate, using what may be incorrect or false assumptions and approximations, that fusion of isotopic fuel in a material, ie. cold fusion, can not "work" (eg. Ohashi, Cribier, Chapline). The applicant respectfully asks the examiner to reconsider, because in actual fact such calculations were historically presented "proving" that heavier-than-air ships (ie. airplanes) "cannot fly". As another example: such calculations only created a virtual "drag" to the innovation of ideas, and their development and implementation, involving airships - which later evolved to include jets and spacecraft.

"Professor Goddard ... does not know the relation of action to reaction ... he only seems to lack the knowledge ladled out daily in our high schools"
[New York Times, January 13, 1920]

"... after a few more flashes in the pan, we shall hear very little more of Edison or his electric lamp. Every claim he makes has been tested and proved impracticable."
[New York Times, January 16, 1880]

=== ERROR BY EXAMINER REGARDING FLEMMING

138. The Office has in the past cited Fleming and other papers where the loading times are too short. For example, Fleming some were half a day, the longest was 5 days. Without the codepositional techniques taught in the original specification and claims of the above-entitled application, the times are weeks to achieve the desired reactions. Furthermore, the loadings were insufficient. Fleming only had a loading estimated at 0.75 (page 521). This loading is now known to be too low (Swartz 97A).

=== ERROR BY EXAMINER REGARDING HARWELL

139. The Office has cited Harwell. This program is believed to be one of the most comprehensive worldwide with as many as 30 cells operating at a time and over 100 different experiments performed. However, was there no evidence of any excess heat generated in any of the Harwell cells? Harwell had flawed analysis, and as the Examiner knows, but ignores and fails to comment upon, was shown by the U.S. Navy, upon close analysis, to have had positive results in Cell 3. Melich and Hansen (Melich 93) have reported that:

> **"In Harwell's D2O Cell 3 there are more than ten time intervals where an unexplained power source or energy storage mechanism may be operating. ***Harwell Cells 1,2,3 and 4 were wired in series to a constant current source. *** Throughout these anomalous increases in temperature in Cell 3, Cell 4 behaves "normally", i.e., it suffers no unexplained pulses of energy. Our initial estimate of the power associated with these anomalous temperature increases is 100-200 mW."**

{Melich, M.E., Hansen, W.N., "Some Lessons from 3 Years of Electrochemical Calorimetry", in ICCF-3 Frontiers of Cold Fusion", Academy Press (1993)]

Thus, Harwell's cell 3 supports the characterization of "positive results".

=== ERROR BY EXAMINER REGARDING HUIZENGA

140. The Office has cited Huizenga, while ignoring that he is focused on sales of his old inaccurate book. First, the book has nothing to do with the present invention. Second, the book is not up-to-date with respect to cold fusion, nor is it accurate. Most importantly, this book focuses on a few mistakes of a few individuals from 1989, and does not reflect either the science or engineering of the field in general today, or the present invention specifically. Third, Huizenga's book and its unsubstantiated and inaccurate statements and claims have been criticized by many including Mallove (94; see also his Declarations). Dr. Huizenga would pass off the entire field as "pathological science", but given that he fails to read the literature, or respond to the issues in his book, his entire premise must be examined. Dr. Eugene Mallove, historian and

scientist, has made some compelling comments about this phrase used against those in the field of cold fusion

"Pathological science" became the common insult, as few noticed that pathological skepticism about a new phenomenon was the real problem. Contrary to the media's perception, cold fusion never died and was certainly never disproved; it simply went underground as groups of courageous scientists in over a dozen countries mounted a concerted effort to understand and reproduce the mysterious phenomenon. Thanks to their hard work, it has survived."

[Mallove, "COLD FUSION", May 1994 issue, vol. 1, number 1]

141. Fourth, attention is drawn to the simple fact that no "Epilogue" by one writer can refute the copious -- and continually growing -- positive data which exists for cold fusion. Many attendees at the ICCF-4 meeting in Maui (including the Applicant) watched a tired Dr. Huizenga sleep on a couch in the hotel during said Conference; even as three (3) simultaneous meetings were going on at that time. Dr. Huizenga appeared tired and worn, woke up later, after missing a number of meetings, and reported that there was "nothing new". Dr. Huizenga is entitled to his inaccurate opinion, but the Office must rely on those, skilled in the art, that actually attend the Evidence.

142. Fifth, Huizenga's book relies on theories against cold fusion because of the unusual (compared with hot fusion) branching ratio. Some of these "negative theoretical" citations by the examiner calculate, using what may be incorrect or false assumptions and approximations, that fusion of isotopic fuel in a material, i.e. cold fusion, can not "work" (e.g. Ohashi, Cribier, Chapline). There exist other theoretical papers which may explain the observed cold fusion phenomena (e.g. Hagelstein 90, 91, 1993A, 94; Takahashi (91), Swartz 1992, 94A, 96B, 97A, 97B; McNally 89; Hora 93; Johnson 94; Mills 94; Mills 95; Li 95; Kim 90, 94A, 94B, 95, 96; Matsumoto 89; Chubb 90, 91, 94A, 94B; Szpak 91; Tajima (90); Schneider 89; Rice 90, Zhu 90, and Bush 91A). These theories involve loading, material destruction, and nuclear reactions including tunneling, screening, and many other issues. These papers reflect solid research and support the existence of the field but are ignored by the Office. The applicant respectfully asks the Board to reconsider, because in actual fact such calculations were historically presented "proving" that heavier-than-air ships (i.e. airplanes) "cannot fly". Such calculations only created a virtual "drag" to the innovation of ideas, and their development and implementation, involving said airships - which later evolved to include jet planes and spacecraft.

"Professor Goddard ... does not know the relation of action to reaction ... he only seems to lack the knowledge ladled out daily in our high schools"

[New York Times, January 13, 1920]

=== ERROR BY EXAMINER REGARDING JONES

143. The Office has in the past cited Jones and Dagani. The citation of Dr. Jones is not relevant and is immaterial. It is interesting to watch Jones take both sides (see Taubes). and also publish the "positive" results in this field (Jones 89, Jones 90, Menlove and Jones et alia in Menlove 90B).

First, the Examiner should admit that Jones' positive work has been cited in issued US Patents including Czirr 5,231,290.

Second, the Examiner must accept that Jones now does again report neutron emission from these systems, as was presented this year at the APS meeting and then reported on in the Cold Fusion Times (Winter 2003 issue). The fact remain that Jones' experiment work now supports cold fusion.

144. The Office has cited,

"Jones et al .... in J. Phys. Chem, vol. 99, (1995) .... set forth reasons why the alleged obtainment of excess heat in cold fusion systems, can not be relied on as valid."

THE TRUTH - - THE EXAMINER Errs on Jones' Errors already discussed

The Examiner cites Jones' claims, but the Examiner egregiously ignores that the Applicant has already submitted contradicting unrebutted evidence and discussed that evidence including the errors in Jones explained with solid substantive response [A205,A251-A252,A291-292,A322; also A65,A70] including Jones' significant errors (Miles 93A, Miles 94A, 96A, Cravens 96, Tinsley 97). Dr. Miles, as just one example, discusses in great and sufficient detail said errors contained in the Jones papers in his 20 May 1998 to Mr. Dagani, Senior Editor, Chemical and Engineering News

"Enclosed is a reprint of my recently published reply to Jones-Hansen [J. *Phys. Chem. B.* 102, 3642 (1998)]. It was a long and difficult battle for me to have the opportunity to reply to the vicious attack of my work by the Jones-Hansen paper [J. *Phys. Chem., 99,* 6966 (1995)]. In my opinion, their paper contained many distortions and errors concerning my publications rather than the reasonable scientific dialogue that is so badly needed for this field.. ... Although critics like S.E. Jones and others have made it nearly impossible to obtain government funding for cold fusion, this research continues in many laboratories around the world. .... Unlike Jones and his 1989 report of cold fusion neutrons, I find no reason to retract any of my cold fusion claims. The recombination of deuterium and oxygen gases does not explain my excess heat measurements, and atmospheric contaminations do not explain my correlations between the excess power measured and the helium-4 produced in the experiments."

[Dr. Melvin H. Miles NAWCWPNS Fellow, DEPARTMENT OF THE NAVY
NAVAL AIR WARFARE CENTER WEAPONS DIVISION]

In addition, it is important to note that in addition to said errors, Jones has other significant errors as well which are not discussed in these cited references For example, in Jones (95), the discussions of heat rate, thermoneutral potential, and input power are incorrect, and furthermore are not applicable to the present application and invention, as discussed in Swartz (96E) and Swartz (95, 97B).

=== ERROR BY EXAMINER REGARDING JAPAN

145. The Office has in the past cited other countries such as Japan to demean CF. That is so wrong. First, Japan is made of many individuals and institutions, many of which continue cold fusion studies, and who disagree with the hearsay Office claim, as they diligently continue to publish, including [and each of which prove the Examiner and his cited art incorrect]: Arapi, Alban, Faculty of Engineering, Iwate University, Japan, Experimental Observation of New Element Production in the Deuteride and/or Hydride Palladium Electrodes Exposed to the Low Energy DC Glow-Discharge, COLD FUSION TIMES, Volume 10, Number 1, 2003; Arata, Achievement of Solid-State Plasma Fusion, Cold Fusion Times Fall 1997; Asami, T. Senjuh, T. Uehara, M. Sumi, H. Kamimura, S. Miyashita and K. Matsui R&D Center for New Hydrogen Energy, The Institute of Applied Energy 14-2, Nishishinbashi 1-chome, Minato-ku, Tokyo 105, Japan, MATERIAL BEHAVIOR OF HIGHLY DEUTERATED PALLADIUM, The Seventh International Conference on Cold Fusion. 1998; IWAMURA, Yasuhiro, Takehiko ITOH, Mitsuru SAKANO and Satoshi SAKAI, OBSERVATION OF LOW ENERGY NUCLEAR REACTIONS INDUCED BY D2 GAS PERMEATION THROUGH PD COMPLEXES, The Ninth International Conference on Cold Fusion. 2002. Beijing, China: Tsinghua University.; IWAMURA, Yasuhiro, Mitsuru SAKANO and Takehiko ITOH, Advanced Technology Research Center, Mitsubishi Heavy Industries Ltd., 1-8-1, Sachiura, Kanazawa-ku, Yokohama 236-8515, Japan, Elemental Analysis of Pd Complexes: Effects of D2 Gas, Jpn. J. Appl. Phys. Vol. 41 (2002) pp. 4642–4650, Part 1, No. 7A, July 2002; IWAMURA,. Takehiko ITOH, Nobuaki GOTOH, Mitsuru SAKANO, Ichiro TOYODA and Hiroshi SAKATA, DETECTION OF ANOMALOUS ELEMENTS, X-RAY AND EXCESS HEAT INDUCED BY CONTINUOUS DIFFUSION OF DEUTERIUM THROUGH MULTI-LAYER CATHODE (Pd/CaO/Pd), The Seventh International Conference on Cold Fusion. 1998. Vancouver, Canada:, ENECO, Inc., Salt Lake City, UT. : p. 167, J. Kasagi, H. Yuki, T. Itoh, N. Kasajima, T. Ohtsuki and A. G. Lipson, ANOMALOUSLY ENHANCED D(d,p)T REACTION IN Pd AND PdO OBSERVED AT VERY LOW BOMBARDING ENERGIES, Seventh International Conference on Cold Fusion. 1998. Vancouver, Canada:, ENECO, Inc., Salt Lake City, Matsumoto, Takaaki, Hokkaido Univ, Japan, Generating Carbon Tubes and Films from Lead and

Cadmium Wires During Underwater Spark Discharges, TRANS. AMERICAN NUCLEAR SOCIETY, LOW-ENERGY NUCLEAR REACTIONS (2000), MIZUNO, Tadahiko, Tadayoshi OHMORI 1 , Kazuhisa AZUMI, Tadashi AKIMOTO and Akito TAKAHASHI, Confirmation of heat generation and anomalous element caused; Mizuno, Tadahiko Tadayoshi Ohmori, Tadashi Akimoto, Hokkaido Univ, Japan, , Akito Takahashi, Osaka Univ, Japan, Neutronics, Heat and Products Induced by Plasma Electrolysis, TRANS. AMERICAN NUCLEAR SOCIETY, LOW-ENERGY NUCLEAR REACTIONS (2000), Mizuno, Tadahiko, Experimental Confirmation of the Nuclear Reaction at Low Energy Caused by Electrolysis in the Electrolyte, Proceedings for the Symposium on Advanced Research in Energy Technology 2000, Hokkaido University, March 15, 16 and 17, 2000, pp. 95-106., Mizuno, Anomalous Isotopic Distribution after electrolysis, Cold Fusion Times Fall 1996, Mizuno, Tadahiko, Nuclear Transmutation: The Reality of Cold Fusion, Department of Nuclear Engineering Hokkaido National University, Japan, Mizuno, Tadahiko, Tadayoshi Ohmori, Tadashi Akimoto and Akito Takahashi, Production of Heat during Plasma Electrolysis in Liquid, Jpn. J. Appl. Phys. Vol.39 (2000), Mizuno, Tadashi Akimoto, Tadayoshi Ohmori 1 , Akito Takahashi, RELATION BETWEEN NEUTRON EVOLUTION AND DEUTERIUM PERMEATION WITH A PALLADIUM ELECTRODE, The Ninth International Conference on Cold Fusion. 2002. Beijing, China: Tsinghua University., Takahashi, Akito Masayuki Ohta, Osaka Univ, Japan, , Tadahiko Mizuno, Hokkaido Univ, Japan, Radiation-Less Fission Products by Selective Channel Low-Energy Photofission, TRANS. AMERICAN NUCLEAR SOCIETY, LOW-ENERGY NUCLEAR REACTIONS (2000).

Second, the Examiner's disingenuous statement is indelibly rebutted by said Japanese efforts including Mitsubishi's recent paper on cold fusion in China at the 9th International Cold Fusion meeting on 4/02 (*supra*).

Third, groups in Japan are simply not relevant to the present application.

Fourth, if the cited groups had followed the present original specification they would have succeeded.

The Examiner, trying to undermine US security and the US Constitution is directed to additional CF confirmations which have been made by the Japanese [Mizuno (December 1993); Yamaguchi 90].

"The cold fusion phenomena were tested with use of proton conductor solid electrolyte plates maintained at 300~400 deg C. An anomalous level of excess heat evolution of the order of 100 watt cm^{-2} was observed during absorption/desorption cycles of deuterium-containing hydrogen gas under

application of an alternate electric field. ** Samples were made from a mixture of $SrCO_3$ CeO_2'Y_2O_3 and Nb_2O_3 powders. **** The heat generation from the proton conductor in the experiment of deuterium-containing hydrogen gas was estimated to be approximately 50 watt (~100 watt cm-2) over 20 hrs, or ~3.6 MJ in total. The input power given to the sample was +18 V, +/- 40 (micro) A, or 7.2 x 10^{-4} watt. Accordingly, the output-to-input power ratio was estimated to be as large as 7 x 10^4."**

["Anomalous Heat Evolution from $SrCeO_3$-Type Proton Conductors during Absorption/Desorption of Deuterium in Alternate Electric Field"; Tadahiko Mizuno, Michio Enyo, Tadashi Akimoto and Kazuhisa Azumi Hokkaido Univ., Sapporo, Japan (ICCF-4, December 1993)]

146. Despite the incorrect statements by the Examiner, similar confirmations of cold fusion and continued efforts have been made by the Chinese [Jin (December 1993); Li (95, 96A, 96B, 97), Jin (93, 94)].

"The experimental studies of YBCO-D system indicated that YBCO high temperature super-conductor (HTSC) was shown to have a similar effect on deuterium absorbability and anomalous nuclear effect like palladium(1). We found that $Y_1Ba_2Cu_3O_7$-d could absorb deuterium at normal temperature and forms $D_xY_1Ba_2Cu_3O_7$-d. We also found that the deuterated YBCO could produce high energy charged particles far larger than background. The influence of the absorbed deuterium on the characteristic of YBCO HTSC and the mechanism of the anomalous nuclear effect are not clear and needed to be further studied."

["DEUTERIUM ABSORBABILITY AND ANOMALOUS NUCLEAR EFFECT OF YBCO HIGH TEMPERATURE SUPER-CONDUCTOR"; JIN Shang-xian, ZHAN Fu-xiang and LIU Yu-zhen, en Beijing, PRC (ICCF-4, December 1993)]

147. Also inconsistent with the Office's opinion and attempt to hurt the United States and its citizens, are Russia's reports also confirming cold fusion. For example, Kucherov (1993) has confirmed the cold fusion phenomena in the gas glow discharge system.

"The results of four years of experimental work on glow discharge in deuterium with cathodes made of palladium and other materials are presented. About 500 experiments were made. **. Neutron spectra showed neutron energies up to 17MeV with anomalous shift to high energies (five orders) relative to d-d reaction. .. Gamma-spectrometry showed low level radioactive isotopes formation. Together with half - life time measurements it allowed to identify some of the isotopes, such as Rh and Sr isotopes. Most of the lines (~100) are still unidentified. Non-background gamma-lines sometimes can be seen for few days. Most of the gamma-lines appear in lower than 300KeV region. X-ray films outside the chamber with led screens show some beam-like spots with energy 100-200 KeV. Charged particles registration with SSB and CR-39 detectors showed good correlation of the results obtained by these methods. Maximal observed fluxes of charged**

particles were ~10^6S-1. *** X-ray film with lead screens showed X-ray fluxes up to 10gs.] with soft (<1KeV) and hard (10-30KeV) components. Sometimes characteristic X-rays of palladium can be seen with Ge-Li detector."**

["Calorimetric and Nuclear Products Measurements at Glow Discharge in Deuterium"; Yan KUCHEROV, Alexander KARABUT, Irina SAVVATIMOVA Scientific industrial Association "Luch", Podolsk, Moscow Region, Russian Federation (1993)]

148. Thus, there is growing evidence that the Office's opinion that cold fusion "does not exist" is incorrect, but is only made to usurp the United States Constitution, Congressional directive, law, custom, and Applicant's rights. Said evidence includes reports of the progress of cold fusion reveal a real scientific field in Japan, India, Russia, England and France ["Cold Fusion in Japan", Rothwell, *COLD FUSION TIMES*, v. 1, issue 3, page 1, 7, 9, (1993) and "COLD FUSION IMPACT - GLOBAL RESPONSE:", Fox, *COLD FUSION TIMES*, vol. 1, issue 2, p. 2, 5 (1993), Mallove, "*COLD FUSION*", May 1994 issue, vol 1 number 1]. The Examiner should consider "Why there?" The answer is this. Research has flourished mainly in those countries (Lonchampt 96) where patents issue.

As stated in the unrebutted Declaration of Mr. Fox,

"Few other countries have denied cold fusion inventors the rights to the fruits of their ingenuity. The most telling evidence is the fact that scores of patents on cold fusion have issued in other countries (over one-third of all patents issued have been to Japanese inventors and assignees). By contrast almost no patents on cold nuclear fusion have been granted by the U.S. Patent Office"

[Declaration of Hal Fox]

Therefore, the Applicant respectfully requests that the Examiner respond substantively and honestly to Applicant's submitted evidence about Japan, and then finally, tardively, admit the Office's lack of accuracy. Work on cold fusion began in Japan before World War II and continues to this day. The US is now 23 years behind other countries because of the US Patent Office denies allowing valid patents to issue, thereby systematically ignoring both Constitutional and Congressional directive. On information and belief, it appears that some involved with the Examiner and Office have transfered some of this techbnology overseas based upon the appearance of unpublished technology. There is a name for what some in the USPTO have done.

= ERROR BY EXAMINER REGARDING MERRIMAN

149. The Office has in the past cited Dr. Barry Merriman. Dr. Merriman has made several comments about Dr. Swartz. One of those comments is in the last page of the Examiner's cited art. The Examiner cites a paper by Dr. Barry Merriman, entitled "An

attempted replication of the CETI cold fusion experiment". In the paper, Merriman attempts to reproduce an experiment of someone other than the Applicant, and of a system other than the present application or any of the other applications of the Applicant. Therefore, Merriman is not relevant. Most importantly, it is presumed that the reason that the Office cited this paper is because Dr. Merriman cites the Applicant, Dr. Swartz, on page 17, of 17. On that page, although Dr. Merriman is critical of many people in their efforts stating that they are "neutral -- to wildly optimistic", but of the Applicant of the above-entitled invention, Dr. Merriman states,

"Dr. Mitchell Swartz is cold fusion times is unabashedly pro -- CF, but serious, scientifically oriented online magazine."

With that complement by the offices witness supplementing the unrebutted Declarations and the copious unrebutted peer-reviewed publications and other Exhibits, the Applicant now hopes the Examiner will reconsider and issue this patent.

=== ERROR BY EXAMINER REGARDING MILLER and BASS

150. The Office has in the past cited a MEMO (dated 10/9/97) from Bennett Miller to Dr. Robert W. Bass. There are several problems with this citation. First, Miller does not discuss this invention or ANY of Applicant's work (published and/or unpublished). It is therefore not relevant. Miller is admittedly INCONCLUSIVE. Miller states that "it can be argued that the tests were inconclusive for a number of reasons".

Second, Miller is technically inaccurate about cold fusion situation in Japan. Miller confuses the Toyoda/IMRA effort (with F+P in Sophia Antipolis) with the IAE-NHE Laboratory (Shin Sapporo) which was under the aegis of MITI/NEDO and was officially "closed" after 3.5 years of an intended 3 year effort.

In fact, Japan pursued cold fusion before World War II (*Cold Fusion Times*, enclosed herein), and its efforts continue (*supra*).

Third, Miller suggests the use of peer-review. As discussed in the Verner Declaration, the Applicant has done just that,

"I have witnessed Dr. Swartz operate his equipment in front of visitors to the laboratory including Professors Louis Smullin and Keith Johnson from MIT and others."

Applicant has submitted more than 40 peer-reviewed papers and that is abiding by the process, as the Examiner surely would agree. What could be more compliant with Miller's suggestions than that?

Fourth, discussion of errors in Miller, was previously made with solid substantive response [e.g. in the Federal Appendix A316-317, A321]. Where is the Examiner's response?

Fifth, it appears that Miller was also against solar-cell technology in the '70s and therefore has a history of opposing alternative energy sources (like solar cells), and his opinion must be further discounted accordingly.

=== ERROR BY EXAMINER REGARDING MORRISON

151. There are several problems with the Office's reliance upon the late Douglas Morrison. First, the criticism now cited by the Office in new argument has been addressed elsewhere (and shown to be wrong). Specifically, the *COLD FUSION TIMES* (pages 1, 2, 6, 8, 10-11) volume 1, issue 3 (1993) included an update by Drs. Fleischmann and Pons who have responded in great detail to said "criticism" of their work ["Response to Critique of Physics Letters A Paper", *COLD FUSION TIMES* (pages 1,2, 6, 8, 10-11) volume 1, issue 3 (1993)].

Second, discussion of the errors in Morrison was previously made by the Applicant with solid substantive response [A252-253,A292-A293,A323 in the Federal case] and conveniently ignored by the Examiner.

Third, Morrison, previously a serious worker in hot fusion community (CERN), deviated and then widely lectured on subjects such as unidentified flying objects (UFOs) and the Loch Ness monster. He tried to relate them to the more serious serious well-credentialled scientists in the field of cold fusion. To do so, Douglas Morrison preached his own elitist dictum based upon his "view" of science being "superior" in certain locations. Morrison implied that "good" science can only be done by a handful of "good" research institutes which are all located only in Northern Europe and the Northeastern United States. Morrison stated that other people located in Southern Europe, Asia, and Southern U.S. --and who perform research there-- are inferior scientists, who can only produce at best marginal, "bad," inconsequential, science or as he puts it "pathological" science. As proof, the following excerpt is from the Office's reference, taken from the video transcript cited by the Office.

> *"A disturbing pattern emerged in cold fusion experiments. Labs at high prestige universities generally got negative results. Elsewhere results were often positive." [World map is displayed with this voice-over, then Mr. Morrison speaks on camera]: 'I was absolutely astonished when I took northern Europe -- northwestern Europe. All the results were, no, no, no, no -- they couldn't find it. And when I took southern Europe it was all yes, yes, yes. And when I took eastern Europe it was all yes, yes, yes. The United States divided into two parts. If you took the major laboratories and what I call the greater region of The New York Times -- where it was read very much -- it was no, no, no. If you took the remainder of the United States -- the southern part of the United States, it was yes, yes, yes.... This rather horrified me.' "*
>
> [Morrison, 1991, cited by the Office]

This is called the Morrison "Regionalization of Results" theory [1990 "Review of Cold Fusion"]. His detractors point out that this is tantamount to "Aryan Science Numerology" because by whatever name for this scheme, this Aryan/Regionalization theory has nothing to do with either science or the above-entitled application, but involves elements of "hate crime". Like most elitists, Morrison did not hide his opinions. By attacking scientists' results based upon where their laboratory was located makes Morrison's -- and the Office's {since they cite him} -- prejudices quite clear. It is wrong for the Office to again endorse this, and thereby align the United States of America with such salient discrimination, hate crime, and prejudice. However, it does seem that discrimination is in vogue at the USPTO.

=== ERROR BY EXAMINER REGARDING NEUTRONS

152. The Office has in the past cited the absence of neutrons in LANR. Fusion of isotopic fuel in a material does not usually produce significant numbers of neutrons external to said material. Therefore, many of the so-called putative "negative" results do not negate anything at all because the absence of neutrons is not the evidence of the absence of fusion of isotopic fuels in a material [eg. Williams, Kreysa, Ziegler, Hajdas, Faller, Alber, and Lewis]. Furthermore, the actual generation of neutrons although unlikely is discussed in the Examiner's cited work. These positive results include Shani, who monitored stimulated neutron radiation from deuterated materials after said deuterated materials were neutron-irradiated. Also Jones. In fact there have been many reports of low level neutrons from these systems (Gozzi 92; Wolf 90; Arata (90); Menlove 90A, 90B, Takahashi 91, Scott (90); De Nino (89); Yamaguchi (90); and Mallove (see *Fire from Ice*).

=== ERROR BY EXAMINER REGARDING NOVA

153. The Office has in the past cited the "ancient" NOVA tape. The applicant discussed the videos in the previous communication to the Examiner. Where are the Examiner's substnative responses to the previous submitted response by the Applicant? The Examiner has ignored that the Office cited the NOVA video before repeatedly, and each time the Applicant responded with three (3) videos [CBC (1993), CBC (1994); BBC (1994)] on May 26, 1997 and November 8, 1997. The Examiner should examine the three (3) videos which Applicant sent [CBC (1993), CBC (1994); BBC (1994)] to the file folder, of which this application is a Divisional. Said videos rebut the Examiner. The Applicant's videos rebut the Office's reliance and dependence upon an older less accurate video (A10-A13,A18; A197,A240,A323-325,A327-330,A339 in the previously submitted Exhibts rendered with Applicant's response). Unlike the older NOVA video, other more recent documentaries -- already supplied to the Office by the

Appellant -- made by reputable production groups such as the Canadian Broadcasting Company [CBC (1993), CBC (1994)] and the British Broadcasting Company [BBC (1994)] have meticulously researched and reported the truth surrounding cold fusion. Scores of individuals in the scientific community have contributed to the latter documentaries, and by doing so declare the Office's flawed opinion on these matters to be wrong. Those references which are cited by the Examiner are not only stale, but should be handicapped by the Examiner because many are in error, and simply did not get it right. In contrast, the references supplied by the Applicant show the present state-of-the-art, including publications by those actually working in the state-of-the-art.

Given the extensive "positive" published results which confirm the generation of products (including excess enthalpy) using isotopic fuel loaded into a material, the applicant therefore respectfully requests that the Examiner reconsider the rejection.

=== ERROR BY EXAMINER REGARDING ROUSSEAU

154. The Office has in the past cited Rousseau. This new argument is very flawed. First, as before, the Office again takes selected and older and biased excerpts to attempt to prove its "point". Second, the Office confuses purported "pathological science" with now-documented "pathological skepticism". Third, the authors whom the Office cites do not describe, or respond to, or show, the invention of the present above-entitled application.

Fourth, Dagani admits that [Dagani (1992)] growing numbers of the scientific community do take seriously the "excess heat" of cold fusion [cf. Freedman (Science 4/24/92), Chandler (Boston Globe 4/17/92), Arthur C. Clarke in Discover Magazine 5/1997]. As a result, it has been reported that scientists are "**quite convinced that there is a source of heat**" [e.g. Prof. Philip Morrison as reported in Chandler] and are "**not concerned about the lack of neutrons (expected in a conventional) fusion reaction**" [e.g. Prof. Louis Smullin as reported in Freedman].

Fifth, the United States Patent Office itself has issued patents in this field, and they have been discussed by the very same authors whom the Office cites.

> **"A bottle no bigger than a man's fist is creating an unusual stir among power generation engineers. The bottle is filled with ordinary water and microscopic palladium coated beads. When a little electric current trickles through the bottle, several hundred times as much power starts coming out in the form of heat - that is, if one cares to believe the instruments attached to the bottle. ... Yet supporters say something is going on inside the little heat producing bottle. As with the Utah apparatus, it's claimed that the bottle produces an excess of power as it electrolyzes, or breaks down, water molecules into hydrogen and oxygen atoms. But unlike the controversial and**

unpredictable Utah experiments, The Patterson cell can be turned on and off seemingly at will. Several working devices built by Dr. Patterson have been made available to two teams. "This is the first time what we have a system that seems to work every time," says a nuclear chemist who consults to utilities. The cell's reliability, which would allow scientists to manipulate it, "gives us our first chance to see if this [phenomenon] involves a nuclear reaction," he explains. "Moreover, the U.S. Patent and Trademark Office, which has flatly said that cold fusion, like perpetual motion, is impossible and unpatentable, has issued a patent on the gadget."

[JERRY E. BISHOP, *The Wall Street Journal*, January 29, 1996, underline added for emphasis]

=== ERROR BY EXAMINER REGARDING SILVERIA AND MYERS

155. The Office has in the past cited Silvera and Myers. However, they did not achieve their loading by the method described in the present original specification, and therefore does not apply. Specifically, Silvera (90) used a diamond anvil to attempt to load palladium with deuterons. Although high pressure was obtained, the reaction was monitored by neutron detectors, and neutrons are not the proper signal for these types of reactions, even if they were achieved by the quite different system of Silvera (90). Also, Silvera may have seen a slight increase, as it is difficult to state since there were insufficient initial background levels reported (Fig 3, page 9145, Silvera (90). Furthermore, the papers states: "The neutron detector had deviations of 0.3 counts/h from the average of 2.1 counts/h,. which we did not consider to be significant (bottom column 1, page 9145, Silvera (90)).

Myers et alia (90) used a 10,000 volt ion implantation cryogenic (41 to 81 degrees Kelvin) technique to load palladium with deuterons. Although high pressure was obtained, the these were quite inhomogeneous (see figure 5, page 266, Myers (90)). The reaction was monitored for 15 hours by charged particle detectors. Such detectors may not be the proper signal for these types of reactions (Mallove, also vide supra), even if they were achieved by the quite different system of Myers (90). Also, Myers did see a very slight output consistent with some possible fusion reaction (see figure 1, page 264, Myers (90)) which created 300 counts per channel of tritons. Furthermore, Myers only did this for 15 hours, which is too short (confer Swartz 97E).

Silveria and Myers demonstrates the field is real, and that many would have benefited by the granting of the patent described in the original specification and claims of the above-entitled application.

=== ERROR BY EXAMINER REGARDING TAYLOR

156. The Office states,

"In the Taylor et al article (co-authored by Jones), which was submitted to the Fourth International Conf. On Cold Fusion (held Dec. 1993), it is stated in regard to the detection of neutrons from their cold fusion experiments, "The results do not provide compelling evidence of neutron production" (note particularly abstract and pages 6, 7, 9, 10)."

THE TRUTH - THE EXAMINER Errs Because TAYLOR AND JONES DESCRIBE NEUTRON EMISSION

The Office has in the past cited Taylor. Actually, the Taylor article itself describes a possible evidence of neutron emission. There was a 2-sigma deviation in the sample that demonstrated tritium. That "coincidence" is acknowledged in the article, and some of the authors admit that they should have repeated that several more times. The Examiner should read the cited articles, and also confer with the Jones neutron paragraph above. And neutron emission has nothing to do with the preferred embodiment of the present invention.

=== ERROR BY EXAMINER REGARDING TAUBES

157. The Office has in the past cited Taubes. Any reference to Journalist Taubes' commentary is wrong, irrelevant, immaterial, and egregious. Taubes focuses on a few mistakes of a few individuals from 1989, and does not reflect either the science or engineering of the field in general today, or the present invention in specific. Taubes (like Huizenga) is a career-"negativist" to this field who makes a living off of his book. However, Taubes is a science reporter and not a scientist. Nor has he been sworn in or proven by the Office to be an expert in these matters as the Applicant has done with the Declarants to date.

First, not only did no alleged tampering take place, but the generation of detected tritium has actually been confirmed elsewhere including in US national laboratories. Furthermore, the dynamics of the tritium which did appear, could probably not have been "spiked" as discussed in Mr. Taubes' unsubstantiated allegations crafted as innuendo to which the Office refers. Both Taubes, and now the Office, owe apologies to all individuals whom they have impugned in this made up story.

Second, the Office's reliance on such a purported dubious incident has **NOTHING TO DO WITH** the original specification of the above-entitled application.

Third, Taubes' book has many frankly silly and stupid errors including claims that researchers in this field do not measure electric current, or baseline levels. The Figures in the original specification of the above-entitled application and the other of the Applicant's inventions and peer-reviewed publications show that this is not true for the present invention.

Fourth, Taubes' book has been severely -- and correctly -- criticized by Miles (92A), also Miles (92B), and Hoffman (94). Also see Mallove.

=== ERROR BY EXAMINER REGARDING ZIEGLER

158. The Office has in the past cited Ziegler, Faller, Salamon, and Cooke who purportedly report negative results, while looking for neutrons. However, attention is directed to the fact that Faller did report a tritium increase. Other actually "positive" evidence in the Examiner's art does support the existence of these reactions From 1989, Shani monitored stimulated neutron radiation from deuterated materials after being neutron-irradiated. However, fusion of isotopic fuel in a material does not usually produce significant numbers of neutrons external to said material. Therefore these so-called putative "negative" results do not negate anything at all. In addition, not all of the art cited by the examiner was "negative" with respect to neutrons. Within the papers cited by the examiner, Shani did in fact monitor stimulated neutron radiation from deuterated materials after said deuterated materials were neutron-irradiated.

SOME ERRORS OF LAW DISCUSSED BY THE EXAMINER

=== ERROR BY EXAMINER REGARDING DASH

159. The Examiner states:

"The Board decision in Ex parte Dash, 27 USPO 2d 1481 is considered pertinent here."

THE TRUTH - THE EXAMINER Errs Because Significant Evidence was Submitted

The Examiner has a new argument regarding the Board of Patent Appeals and Interferences in the Dash decision. The Examiner claims the Dash decision says cold fusion does not exist. Then the examiner asserts -- without proving it -- that the Dash case is the same as the present instant case. However, there are several misstatements and logical errors in this new argument.

First, the decision states [Ex parte Dash No.92-3536 (Decided November 24, 1992 Released May 11, 1993)]: "applicants failed to produce any evidence to overcome examiner's position. .... " [U.S. PTO Board of Patent Appeals & Interferences; Ex parte Dash No. 92-3536 November 24, 1992] **That is not the case here.** More than three hundred references, the supplied Declarations, and the Applicant's published reports in peer-reviewed journals, overcome the Examiner's position, not just because of the quantity of references, but because of the quality. The Declarations alone overcome the Examiner's position if the Examiner actually obeyed the law and the Office's rules.

160. Second, the present invention is neither described by, nor referred to, within Dash, or said Appeal Decision. Dash is simply a different case despite the Office's new argument. As such, the use of the Dash decision is improper.

The amount of evidence required for proof of utility depends on the facts of each individual case [In re Gazave, 54 CCPA 1524, 379 F.2d 973, 154 USPQ 92 (1967); In re Chilowsky, 43 CCPA 775, 229 F.2d 457, 108 USPQ 321 (1956); In re JOLLES, U.S.C.P.A., 1980, 628 F.2d 1322, 206 USPQ 885]. Applicant has provided the Office with those parameters, and previously in a case before the US Supreme Court, the Office was caught being dishonest about voltage, temperature, and other parameters. A copy of that is included with this response so that the Examiner and the Court if necessary can see that this disingenuity is systematic. Applicants data and sterling references consisting of scores of articles taken from peer-reviewed and other scientific and educational journals, all in rebuttal to the Office's misstatements. Appellant's references have been listed on Forms PTO-1449 with the appropriate Petition pursuant to 37 CFR 1.97(d)(1)(ii), and certificate pursuant to 37CFR 1.97(d)(1)(e), appended. Said references, like the submitted unrebutted Declarations are relevant and overcome the opinions of Examiner because of the reasons stated in said Appeal and Reply Briefs.

THE OFFICE HAS BEEN DISINGENUOUS TO THE BOARD

161. The Examiners' disingenuity (after being corrected by Declarations removed, and peer-reviewed papers also removed) is improper and not consistent with the standards of review. By condoning disingenuity by the Examiner on federal documents, and by allowing removal and ignoring submitted Evidence, the Office has been acting in egregious, odious manner. DTRA, DARPA, the US Navy, NASA and other US agencies that now take the Applicant's inventions and the fields in which they also work quite seriously. And yet, to enable transfer of the technology overseas, the Examiner and Office substitute their own fabricated, repeated, systematic disingenuity for the Appellant's (then Applicant's) submitted documents. The literature shows the Office's belief is obstructively, vindictively, wrong. DTRA disagrees with the Office's notion and assessment. DARPA disagrees with the Office's notion and assessment. The US Navy disagrees with the Office's notion and assessment. NASA disagrees with the Office's notion and assessment. Thousands of scientists disagree with the Office's notion and assessment.

Fact 15: The Office Has Been Systematically Disingenuous

162. The Office has a past history, in all other of this group of Applicant's patent applications, of being abusive to Applicant by ignoring arguments, and then disingenuously twisting facts around, required to maintain the illusion. As one example, attention is directed to the Examiner's utterly deceptive, false, misleading statement previously that the present invention involves removing the electrode, when the original above-entitled specification says otherwise.

163. As another example, all meticulous efforts of the pro se Applicant has been ignored. The reason is that the pleadings completely rebutted the Examiner. And so, to this date, the Office has utterly failed again to respond substantively to the arguments or Declarations.

164. There has been no fairness, and no transparency. The Examiner has simply ignored the Applicant's grounded, scientific, Declaration-supported, arguments. The Examiner should have considered and precisely commented upon the Applicant's substantive reply accompanied by the solid evidence already submitted. But he has not. Never. The present Communication simply repeats his previous disingenuous errors.

Fact 16: Declarations Describe the USPTO

165. The Patent Office has acted wrongly. As the Hagelstein Declaration states,

"12. Since the USPTO refuses to recognize the existence of the effect, patents can-not be obtained on the associated technology. Because of this, funding to de-velop the technology is generally unavailable, or very nearly so, which hinders its development. By following its misguided policy in this area, the patent of-fice impedes the development of technology that would address the energy problem, that would impact the availability of fresh water, and that could pro-vide a real solution to the climate change issues the world faces. The devel-opment of this technology could have a real impact on national security, as the instability which results from the current situation regarding the finite avail-ability of oil in less than friendly regions could be mitigated with the new en-ergy source this technology promises. The development of a new energy tech-nology in this area would be expected to provide jobs, which are badly needed at this time."

166. As the Hagelstein Declaration states,

"13. According to the USPTO website, the mission is described as: The USPTO mission is to ensure that the intellectual property system contributes to a strong global economy, encourages investment in innovation, and fosters entrepre-

neurial spirit. The USPTO promotes industrial and technological progress in the United States and strengthens the national economy by:

"Administering the laws relating to patents and trademarks.

"Advising the Secretary of Commerce, the President of the United States, and the administration on patent, trademark, and copyright protection.

"Advising the Secretary of Commerce, the President of the United States, and the Administration on the trade-related aspects of intellectual property".

In the general area of the Fleischmann-Pons effect, the USPTO accomplishes ex-actly the opposite of its mission. The global economy is faltering, and this technology could make a difference, but is not allowed to do so because of the USPTO. The USPTO hinders industrial and technological progress, since pat-ents generally are not allowed, because there is little or no investments (be-cause intellectual property cannot be protected). In general, the USPTO pre-vents progress through its actions, contrary to its mission statement."

167. The Examiner has acted wrongly in this matter, and has a history of this. The Ahern Declaration states,

"I sympathize with the Applicant, Dr. Mitchell Swartz. I can understand his frustration with one USPTO examiner, namely, Mr. Palabrica, who was an ex-aminer for my filing of a patent application on an invention involving high en-ergy density discharges and their intensification by high voltage pulses in liq-uids. For this invention, I drew on the vast experience of decades of exploding wire experiments and other high energy density studies. I based the invention on the same principle that is routinely observed in femtosecond laser-matter in-teractions. This invention was useful because energy could be extracted. My patent application was taken by Mr. Ricardo Palabrica."

"The Examiner Mr. Palabrica denied my application and dismissed all of my claims on the grounds that he deemed that it was "cold fusion". My technology, my scientific explanations, and my arguments were summarily essentially ig-nored and dismissed by Mr. Palabrica, as he appeared to have pre-judged my technology and invention as part of the 'cold fusion' phenomenon. It was not. I did not even used those words. I did not even use the word "fusion" in my filing. I did use the metal palladium and heavy water, but the similarities ended there."

168. As with this present invention, Mr. Palabrica has demanded changes and then claimed "new material". This is wrong. The Ahern Declaration states,

"In discussions, Mr. Palabrica implied that if I removed all references to palla-dium and heavy water that a successive patent application would be allowed. Mr. Palabrica said that a new filing without the words 'fusion', 'palladium' and 'heavy water' would have a much better chance of moving

forward. This was an odd request by Mr. Palabrica because to compliance to his demand would have made a second filing useless by removing the very materials used. Be-cause Mr. Palabrica apparently has the power to decide what an inventor's tech-nology would be, I gave up in frustration even though I believed, and continue to believe, that the technology was sound. "

"I am the inventor of over 20 patents, and have never experienced such a re-sponse from any Examiner before, like I have from Mr. Palabrica. Mr. Palab-rica's response was inappropriate for a Patent Examiner. The comments in-volve attempting to change an invention by overstepping his directives and act-ing as a 'protector' of scientific knowledge."

"The Applicant, Dr. Mitchell Swartz appears to be laboring under the same mis-use of authority.

Fact 17: The Office Has Systematically Ignored Exhibits and Operability

169. The Office has not been honest even AFTER description of the invention was published by peer-review by the American Nuclear Society, and described by (unrebutted) Declarants. The Applicant undertook the full burden coming forward with Evidence as required [In re Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444]. Significant, detailed, precise, specific, substantive arguments and Evidence of record were submitted by the Applicant to show that the Examiner was incorrect, and to support that the invention does operate as indicated with Applicant. At the US Patent Office, the submitted Evidence was removed/ignored/or destroyed (as it has been, over and over, *vide supra, vide infra*, by the Office) and the invention misdescribed (as it has been over and over by the Office).

Fact 18: The Office Has Been Contemptuous of the Board

170. The Office has been contemptuous of the Board several ways. First, there has been serial disingenuity.

Second, the Office has had the Board "rubberstamp" its disingenuity for discriminatory and egregious purposes.

Third, there has been withholding of documents.

Fourth, the Board made the Applicant's patent application "Special" and it was thereafter targetted, dissected, and absolutely obstructed.

Fact 19: The Office Has Been Contemptuous of the Board Order

171. The Examiner is wrong because the declarations were all ignored going back to '937 and '480 with Dr. Palabrica. The Office did not provide any serious, precise, honest reason --not one-- to doubt the objective truth of any of the Declarants'

statements relied on for enabling support. The Examiner attempted to throw the application out rather than answer the Applicant's arguments, and he still (even after repeated corrections) refuses to describe the invention correctly. The Applicant appealed to the Board of Patent Appeals and Interferences (Appeal No. 94-2921). The Examiner was disingenuous to the Board claiming there was "new matter" and that "excess energy" was involved. The Office was disingenuous about the present invention. It was never true as the Office claimed that the Applicant claimed or discussed "excess heat". Those words were never in the original specification and claims. In addition, the Office ignored eveything the Applicant sent and then disingenuously claimed that the Applicant failed to respond.

172. In addition, attention is directed to the fact that both the Office's allegations of purported "new matter" and "excess energy" were both false. "Deuterons" were not new material but were mentioned within the entire original specification and claims. Second, the Patent Office and Examiner's false rantings led to the phrase "excess energy" being mentioned, if memory serves, 37 times in the Board's Decision, when the phrase was never even used, not once, in the original specification and claims. The notion arose from the Examiner's endless linking of the invention to Fleischman and Pons.

173. The Board Ordered, with authority pursuant MPEP §1211, and explicitly required a response to address the cited relevant Declarations regarding material matters of fact (operability and utility). Said remand stated, "Further, the examiner should explain why these 'filings' and 'references' are inadequate in evidentiary weight, to overcome the evidence proffered by the examiner."

174. The Office Ignored Orders from the Board. The failure of the Office to substantively and precisely reply to the Board's Order for a response to the relevant Declarations is a matter of fact. The Examiner remains in contempt. The Order of remand stated,

- "Further, the examiner should explain why these 'filings' and 'references' are inadequate in evidentiary weight, to overcome the evidence proffered by the examiner."

That remains as true today, as it does then. The Examiner, unsworn, impugns scores of Declarants who have sworn the affidavits.

UNDISPUTED INCONVENIENT FACT: Evidence Withheld from Docket, Board and court by Office

175. What was revealed in '970, previously before Board of Patent Appeals and the US federal court, is that the Office's "docket" was inaccurate in several ways. The Office was (and had been) disingenuous about Evidence. When a duces tecums was delivered to the USPTO's counsel in the federal appellate court, it was revealed that some of the Declarations were egregiously hidden from the Board. The Evidence finally appeared in the federal appellate court (where the present Amicus Briefs and Declarations were not available because of protest by the Examiner and the lawyer for the US PTO) that some of the Declarations were egregiously hidden from the Board and the federal court.

The findings by *Duces tecums* on subpoena are serious (as is the present false statement by Mr. Keith) because Evidentiary materials were witheld, and/or removed. The exposure demonstrated that the Office had failed to log in or consider all the relevant submitted Declarations - despite a previously ignored Remand by the Board to do just that. Only as a result of discovery in federal appellate court were the following discovered: The Office's "docket" given to the Board was inaccurate in several ways. The Office's "docket" was not timely recorded by the Office.

176. It was revealed ONLY AFTER the Board's Decision (In re Swartz) that not all the pleadings and Declarations were actually logged into the record.

It was revealed ONLY AFTER the Board's Decision (In re Swartz) that as many as six (6) pleadings of, or communications by, the Office were not sent to the Appellant.

It was revealed ONLY AFTER the Board's Decision (In re Swartz) that thirty seven (37) of Appellant's pleadings and Declarations were not recorded.

It was revealed ONLY AFTER the Board's Decision (In re Swartz) that seven (7) of the Office's entries were out of order, indicating that the purported "Docket" was not made contemporaneously.

It was revealed ONLY AFTER the Board's Decision (In re Swartz) that pleadings and Declarations were "misplaced" by not recording them.

It was revealed ONLY AFTER the Board's Decision (In re Swartz) that some Declarations were incorrectly listed as "letters", and nearly a score of pleadings listed out-of-order temporally [and even later labeled with half-"1/2"-numbers], these pleadings and several Declarations all reached the Office as proven by the stamp of the US Patent Office. The Declarations entered late were given "half" numbers to fit them in.

177. On December 28, 2000, Appellant filed a Cointinuation of '970, entitled Serial no. 09/ 750,765 [Filed: 12/28/00].

In addition, on January, 18, 2001, Appellant filed a Petition for Certiorari (*) to the Supreme Court of the United States (00-1191) and a Request for Consideration (*) - under violations of United States Constitution [Article I, Section 8, Clause 8, Article III, Article IV, and the Fifth and Fourteenth Amendments.

> What was exposed, resulting in said Request for Consideration and said Petition for Certiorari to the Supreme Court of the United States was that the Office had failed to log in or consider all the relevant submitted Declarations - despite a previous ignored Remand by the Board to do just that. So, following the revelations that someone in the Office had 'doctored' federal documents (**), the US Patent Office defaulted (ie. failed to answer). The Office failed to Respond in the Supreme Court (twice; ***).

178. (**) - Corroborating the above, in '937, another case previously before Board, the same co-conspirators wrongly removed Declarations from that file folder which was only exposed through the same federal court proceedings --- AFTER the Board of Patent Appeals commented. This is probably why the Examiner and Mr. Keith have worked to prevent Appellant's Appeal Briefs from reaching the Board of Patent Appeal. These unlawful actions are now -- given the Agreement by the Board of Patent Appeals (February 22, 2011) -- about to precipitate several federal lawsuits, and upcoming Congressional investigations, which otherwise might be unnecessary in the absence of the present false statement in the present "Notice of Abandonment (when there was none)". In '937, the Office was also disingenuous to the Board claiming there was "excess energy" was involved. Those words were never in the original specification and claims. It was never true as the Office claimed that the Applicant claimed or discussed "excess heat". The Board of Patent Appeals and Interferences "rubberstamped" the Examiner's false argument, and it was mentioned dozens of times in the Board's Decision, yet the phrase, "excess heat" was never even used, not once, in the original specification and claims. In '937, the Office's "docket" given to the Board was inaccurate in several ways. The Office's "docket" was not timely recorded by the Office. Forty-three (43) of the timely-submitted pleadings, Declarations, and letters sent by the Appellant were not even recorded. Several of the timely-submitted sworn Declarations were incorrectly listed as "letters". Nearly twenty pleadings were listed out-of-order (showing they were not timely recorded), and only later inked in with half-numbers [e.g. "1/2"]). Specifically, the Declarations were entered late after the case left the Board. The docket was doctored to give the appearance of nothing having been submitted. In '937, as in '970, no explanation was given for the eighteen (18) Office's entries out-of-order temporally, indicating that the purported "Docket" was not made contemporaneously --- and in defiance of the Office's date stamps --- and in violation of 18 U.S.C. 2071.

179. (***) - Why did the Patent Office refuse to respond to the Appellant's Petition for Certiorari (00-1191)? It was the USPTO's first time in history to have defaulted. It is probably because it became clear that the Office had failed to log all the relevant submitted Declarations. Furthermore, it became clear that the Office had corrupted the record and then

misled the Board and then the Court mischaracterizing the above-entitled invention by claiming there was "excess heat" when it was never even mentioned in the original specification and claims. Also, because newly discovered Evidence including the SAW Memorandum has revealed that the Examiner and his group Art have acted in conspiratorial behavior encouraging systematic violations of 18 U.S.C. §1001. - By contrast, the U.S. Supreme Court has ruled that any pro se litigant is entitled to less stringent standards [U.S. Rep volume 404, pages 520-521 (1972)].

180. According to the clerk at the US Supreme Court, this was "the first time in history the USPTO (had) ever defaulted". The implication is: "*Fatetur facinus qui judicium fugit.*"

181. No explanation was given for egregious irregularities, or the Office's entries out-of-order temporally, indicating that the purported "Docket" was not made contemporaneously --- and in defiance of the Office's date stamps --- and in violation of 18 U.S.C. 2071. Instead, to the present date, the Office -- under Mr. Keith and other co-conspirators -- has continued to be disingenuous PRECISELY BECAUSE it was revealed that not all the pleadings and Declarations were logged into the record. They refuse to all the case to mature to the Board of Patent Appeal.

Fact 20: In '937, The Office Removed Evidence from Folder, Withheld from Board and court by Office

182. In other applications of the Applicant, someone also removed Evidentiary documents. In its Decision regarding 00-1107, on 11/8/00, the Court of Appeals affirmed the Board's decision for putative lack of enablement under 35 U.S.C. § 112, ¶1, and indefiniteness under 35 U.S.C. §112, ¶2 saying that the Applicant has failed to respond. The federal court stated that "Mr. (sic) Swartz made no substantive arguments addressing the examiner's rejection. ... Mr. (sic) Swartz presented no substantive arguments." [Decision 00-1107, 11/8/00]. The Declarations and peer-reviewed papers, as with '457, were egregiously removed surrepticiously by the Office. Despite the fact that the Applicant provided substantive rebuttal evidence [In re Marzocchi] including Declarations by those skilled-in-the-art, supported by peer-reviewed published papers, the Office removed the Evidence.

183. The Office continued to be disingenuous until the moment in US federal appellate court that it was revealed that not all the pleadings and Declarations were logged into the record. Some of the Declarations were egregiously hidden from the Board and the federal court. They were "misplaced" by not recording them. What was exposed was that some Declarations were incorrectly listed as "letters", and nearly a

score of pleadings listed out-of-order temporally [and even later labeled with half-"1/2"-numbers], these pleadings and several Declarations all reached the Office as proven by the stamp of the US Patent Office. The Declarations entered late were given "half" numbers to fit them in.

184. As a result, there was a Petition for Certiorari to the Supreme Court of the United States (00-1191) and a Request for Consideration. What was exposed, resulting in the Request for Consideration and the Petition for Certiorari to the Supreme Court of the United States (00-1191) was that the Office had failed to log in or consider all the relevant submitted Declarations - despite a previous ignored Remand by the Board to do just that. So, following the revelations that someone in the Office had 'doctored' federal documents, the US Patent Office defaulted (ie. failed to answer). The Office failed to Respond in the Supreme Court (twice). According to the clerk at the US Supreme Court, this was the first time in history they had ever defaulted.

"Fatetur facinus qui judicium fugit."

BACKGROUND: The Office Was Disingenuous in Applicant's Inventions in Associated Cases

Fact 21 -In '457, the Office Was Grossly Disingenuous and Destroyed Submitted Evidence

185. The Examiner has brought up the Board of Patent Appeals in '457, and therefore the entire matter is relevant including when the Office has been disingenuous to the federal court. The Office achieved the Decision in '457 by a combination of fraud, contempt, and deception by the Office. The Office achieved the Decision by fraud, the "tip of the iceberg" of which was revealed in the federal appellate court. In the past, in '457, also a novel calorimeter (a heat-measuring instrument) and a "method to ... characterize (a) sample", the invention was NEVER discussed. The Office ignored the evidence, ignored the invention, and removed Evidence from the file folder.

186. In 457, the Office ignored Evidence including submitted relevant, peer-reviewed papers and Declarations. In 457, the Office achieved the Decision by deception involving disgenuity, disrespect of Applicant's Declarants, and misdirecting the Board and Court by hiding, removing, and destroying peer-reviewed publications and Declarations. Applicant's peer-reviewed publications, especially Swartz. M., 1997, Fusion Technology, 31, 63-74 ["Swartz(97)"] prove that the present invention was operable at the time it was filed, and demonstrate validation, and fully address all matters criticized by the Office- which may explain why they are ignored by the Examiner now, and removed from the file folder previously. In Applicant's application '457, Applicant submitted Swartz(97) to the Office eleven (11) times, but it was substantively ignored and repeatedly removed from the file. Documenting this further, the egregious Decision (simply rubberstamping false statements from the Examiner) referred to "cold fusion" eighty-six (86) times. But the truth is that the words which defined '457 and '058, like 'thermal output","thermally monitoring", "electric power drive", "optimum drive condition", and "multiring calorimeter" were never even used once, not one time, in the Decision.

In 457, the Office ignored Evidence. The Office ignored Evidence including submitted relevant, peer-reviewed papers and Declarations. The Evidence --including the Declarations-- demonstrated validation, operability, and utility as taught in the original specification and claims. They also demonstrated quality control and quality assurance necessary for validation and operability.

In 457, the Office "led away" from the present invention using cloth cut of other art.

In 457, obstruction of justice involving "lost", missing, and/or destroyed Federal documents under the watch of the Office (and now the Board) is confirmed several ways.

It is odious that after receipt of so much evidence, that after receipt of more than a dozen copies of the key document, that the Evidence was never discussed.

187. Attention is directed to the fact that, in this case, Examiner has also ignored the salient implication of the USPTO failing to respond to the Petition for Certiorari after it was exposed that some in the USPTO had been altering Evidence and withholding it from the Board and court (see below).

Fact 22: In '457, The Office's Witnesses "Turned" On the Office

1889. In '457, the Office's previous witnesses reject the Office's notions. Their testimony was removed by the Examiner with the appearance of impropriety. Here are some examples. Dr. Rehn, United States Navy, turned on the Office and said:

"Perhaps the clearest scientific fact, at this time, is the hardest for physicists to accept: nuclear reactions apparently do occur in deuterium-loaded Pd, Ti, and probably in other solids."

[Rehn, V., Ahmad, I., "The Third International Conference on Cold Fusion", Scientific Information Bulletin, Office of Naval Research Asian Office, NAVSO P-3580, Vol. 18, Jan. 1993; underline added for emphasis]

189. The Office's previous witness, Dr. Will, rebutted the USPTO and said:

"Significant positive results have been obtained in each of these laboratories. ... Over 100 groups from more than 12 countries have now reported ... " [F. Will; Final Report National Cold Fusion Inst.(1991)]

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190. The Office's witness, Dr. Michael Schaffer (cited in the Exhibit supplied with the rejection) rebutted the USPTO and said:

"I do not see how anyone could construe anything that I wrote at Scientific American's site to imply that there is "no utility" in cold fusion, much less in instruments that might be used in cold fusion and other scientific experiments."

"It appears that the Board of Patent Appeals considers me an expert on this subject. As an expert ... I would agree [Dr. Swartz's invention] ... does does have utilty" [Letter of Michael J. Schaffer (8/7/2001)]

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191. The Office's witness, Jed Rothwell (cited in the rejection out of context) rebutted the USPTO and said:

"None of my statements referred to the functionality, operability or performance of Dr. Swartz's multiring calorimeter. Nothing I have published or heard from scientists casts doubt on the claimed capabilities of Dr. Swartz's invention. In fact, at the Conference reviewed in the article, I interviewed many people and some scientists, such as Dr. Michael McKubre, were enthusiastic about Dr. Swartz's device. Therefore I stated that it may well be a "superb research tool" in the article quoted. It is apparent that the judges of the rejection have standards that are ludicrous and unscientific." [Declaration of Jed Rothwell (8//2001)]]

192. Corroborating the above, Dr. Eugene F. Mallove has said:

"The activity of a sample is an important issue and its measurement has great utility. ... in measuring both endothermic and exothermic chemical and chemical-like reactions, ... The invention does not require the reproducibility of cold fusion phenomena, such as excess heat, to be secure, ...

"... Rothwell actually praises (the present invention) ... when he says, "This could be a superb research tool..."

" [Declaration of Dr. Eugene F. Mallove (8/2001)]

193. Corroborating the above, Dr. Scott R. Chubb has said:

"the patent office (PTO) has ignored the facts involving the present invention, ... The patent application provides a well-defined procedure, understandable by anyone skilled in the art, that can be used to implement the invention. ... It is evident that the patent office has become recalcitrant, with its opinion in contradiction to existing evidence as promulgated through peer-reviewed literature."

"Dr. Swartz has invented an important, new device, whose purpose has value for measuring activity of a sample. ... I assert that the PTO has failed to distinguish between the very different sets of claims associated with measurements of high energy particles and those involving excess heat." [Declaration of Dr. Scott R. Chubb (8/2001)]

194. Corroborating the above, Dr. Hal Fox has said:

"It is my professional judgment that the method of measuring the activity of sample in the above-entitled action is clever, not obvious, and is an important invention with utility. ... The rejection has ignored numerous filings delivered to the Patent Office by Dr. Swartz and others. ... It is not credible that hundreds of scientists and inventors are all mistaken in their experiments and data, or that only the patent examiners are sufficiently educated to point out the faults of these inventions." [Declaration of Dr. Hal Fox (8/2001)]

These Declarations indicate that the measurement of activity has utility, and the precise invention has operability. The Office corruptly ignored the testimony.

Fact 23: In '457, The Office Ignored and Removed Declarations

195. Utility is a fact question [RAYTHEON COMPANY v. ROPER CORPORATION, U.S.C.A., Federal Circuit, 1983, 724 F.2d 951, 220 USPQ 592], and therefore Declarations were supplied which demonstrated proof of utility. Because proof of utility is sufficient if it is convincing to one of ordinary skill in the art [In re Irons, 52 CCPA 938, 340 F.2d 974, 144 USPQ 351 (1965)], the Declarations of Dana Rotegard, Mr. Fox, Dr. Swartz, Dr. Mallove, and the letters of Dr. Kurzweil and Dr. Ahern, were submitted including on March 12, 1997, and June 28, 1997. Applicant discussed said Declarations in the Responses to the Examiner. Said Declarations were received by the Office and have been systematically ignored.

196. In '457, the Declarations fully addressed all matters criticized by the Office regarding operability and utility, substantially and fully. Several Affiants even describedthe week long open demonstrations of Applicant's technology at the Massachusetts Institute of Technology in the Electrical Engineering building in August 2003 during ICCF-10. They confirmed the above-entitled invention's operability, definiteness and utility consistent with requirements [In re Gazave, 379 F.2d 973, 978, 154 USPQ 92, 96 (CCPA 1967); In re Chilowsky, 229 F.2d 457, 462, 108 USPQ 321, 325 (CCPA 1956); In Re Jolles, 628 F.2d 1322, 206 USPQ 885 (CCPA 1980).

197. Said Declarations were ignored in the their factual content because they refuted the Offices' erroneous position. Said Declarations proved that the present claimed invention measures activity and meets at least one stated objective, and therefore utility under 101 is clearly shown [Standard Oil Co. (Indiana) v. Montedison, S.P.A., 664 F.2d 356, 375, 212 USPQ 327, 344 (3rd Cir. 1981), cert. denied, 456 U.S. 915, 102 S.Ct. 1769, 72 L.Ed.2d 174 (1982); E.I. du Pont de Nemours & Co. v. Berkley & Co., 620 F.2d 1247, 1258 n. 10, 1260 n. 17, 205 USPQ 1, 8 n. 10, 10 n. 17 (8th Cir.1980); Krantz and Croix v. Olin, 148 USPQ 659, 661-62 (CCPA 1966); Chisum on Patents, 4.04[4] [1983]; RAYTHEON COMPANY v. ROPER CORPORATION, U.S.C.A., Federal Circuit, 1983, 724 F.2d 951, 220 USPQ 592].

198. Validation occurs when scientists skilled in the state of the art states it is so. In the international community, Dr. McKubre is among the most highly regarded of those skilled in the art. Dr. McKubre stated:

> **"For me ... perhaps the best report at this conference, was that of Mitch Swartz. ... I have always felt that the quality of the calorimetric observations in the nickel light water studies has been less than the quality of the calorimetric observations in the palladium-deuterium system. ... Mitch Swartz presented a very clear piece of calorimetric evidence which is**

certainly going to cause me to reconsider my belief and understanding of the nickel-light water system and its capacity to produce anomalous heat" [Dr. Michael McKubre, SRI, at his closing "Summary During ICCF-7", Infinite Energy, 4, 20 , pp. 34-35, (1998)]

Fact 24: In '457, The Office Also Destroyed/Removed/Ignored Submitted A Peer-reviewed Publication

199. In '457, the Applicant has published his invention for measurement of activity in a peer-reviewed journal run by the American Nuclear Society. The title is "Consistency of the Biphasic Nature of Excess Enthalpy in Solid State Anomalous Phenomena with the Quasi-1-Dimensional Model of Isotope Loading into a Material" Fusion Technology, 31, 63-74, 1997. The paper confirms operability as taught years earlier in the original specification and claims, and proves that the teachings in the original specification and claims were correct at the time of the filing of the original specification and claims. Therefore, enablement and validation are demonstrated by it. At the time of filing of '457, the inventor came forward with solid substantial, timely, evidence of operativeness and utility, confirmed by peer-reviewed publication ["Swartz(97)" meaning: Fusion Technology, 31, 63-74, 1997]. Applicant submitted a copy of said publication to the Office as Evidence because it demonstrated that growing numbers of the scientific community consider the positive results of Appellant's work as being operative. That includes the American Nuclear Society and the American Chemical Society. This paper was listed on Forms PTO-1440 as appropriate. This publication proves the Applicant was correct, and the invention was correctly taught in the original specification and claims on the filing date of the application [In re Hogan, 559 F.2d 595, 60S, 194 USPQ 527, 537 (CCPA 1977)].

200. In an unbiased venue, such peer-reviewed publications (like the timely submitted Declarations) establish facts. Therefore, such Evidence consisting of published peer-reviewed scientific articles which prove Applicant was correct on the filing date of the application, should have already met the bar of enablement [In re Hogan, 559 F.2d 595, 60S, 194 USPQ 527, 537 (CCPA 1977)]. However, in the above-entitled application, in '457, this paper was NEVER even recorded nor addressed. Instead, it was removed from the file folder, over and over and over and over.

201. The peer-reviewed publication ["Swartz(97)" meaning: Fusion Technology, 31, 63-74, 1997] was received, and it was ignored PRECISELY because it demonstrates validation, operability, and utility as taught in the original specification and claims. According to Examiner Wasil, the first copy of the paper was "missing";

removed on his watch. Examiner Wasil informed the Applicant during a telephone call. Therefore, on March 12, 1997, Applicant replaced it (with a copy of the final published paper), discussed it in the Response to the Examiner [pages 50 and 51], and included it on Form 1440. On May 26, 1997, Applicant replaced it again with another a copy of the final published paper), discussed it in the Response to the Examiner [pages 2 and 3], and included it on Form 1440. On November 8, 1997, Applicant (previously Applicant) sent further copies to the Board, and discussed it in the Appeal Brief [including on pages 47 and 57]. Applicant discussed by letter to Examiner Wasil the injustice of the latest missing copy. On June 25, 1998, Applicant sent the eighth, ninth, and tenth copies of the final published paper to the Board, with a copy in each copy of the Reply Brief.

202. Attention of the Board is, and if myopic then the court, the Congressional investigators, and grand juries are, directed to the following simple facts:

A. The relevant peer-reviewed articles demonstrating enablement [e.g. Swartz. M., 1997, Fusion Technology, 31, 63-74] were sent to the office many times. These copies include prepublication drafts and multiple copies of the final printed article. In '457, Applicant provided the Office with this sterling, important reference eleven (11) times. Receipt of this article, over and over, is documented by the integrity of the dates-tamps and post office of the Patent Office.

B. After submitting such relevant, specific, peer-reviewed papers and Declarations, the burden shifts back to the Office and can only be discharged by the Examiner "presenting evidence or reasons why persons skilled-in-the-art would not recognize in the disclosure a description of the invention defined by the claims" [Wertheim, 541 F.2d at 263, 191 USPQ at 97].

C. In response, said article [Swartz. M., 1997, Fusion Technology, 31, 63-74] was never listed nor ever mentioned in the Office's '457 rejection even though it is on several Forms 1440 of the record, and was then discussed copiously in the Responses to the Examiner [pages 50 and 51 of the 3/12/97 Response, Pages 2 and 3 in the 5/26/97 Response, for example], and even in the Appeal Brief [including on pages 47 and 57]. Swartz (97) was neither listed on the Office's first Docket (A3) nor on the Office's revised "second Docket" (A6), nor was it even listed --let alone substantively addressed-- in the Decision which began the Appeal (Appendix C).

203. In '457, eleven copies of the key document were simply ignored and conveniently "lost". Like scores of other documents [including those shown in photographs and Exhibits of UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT cases 00-1107 (Serial No. 07/371,937) and 00-1108 (Serial No. 07/760,970)], the key paper was repeatedly removed from the file folder, i.e. "lost". It was always removed from the file folder [See federal Court Appeal Brief; A10-A13, Table 1 (A18); discussed in the Appeal Brief to the Board on page 40, in the Reply Brief including on page 6-7, 9-10, 19, 24-25, and in the Second Reply Brief including on pages 3-4 [A197,A240,A323-325,A327-A330,A339]. This paper, multiply-submitted, did accompany more than 300 exhibits, also conveniently-for-the-Office "lost.

Fact 25: In '457, Tables Demonstrate Office Disingenuity Regarding '457

204. The Rejection of '457 ignored the actual invention -- a method to measure activity of sample - with or without the necessity of 'cold fusion' or 'excess heat' as it says within it. And yet, proving the Office's deliberate misdescription, the Decision states

"we find that appellant has failed to demonstrate that as of the filing date of the present application, cold fusion processes could be reproducibly carried out"

[Appeal No. 98-2593, July 27, 2001, Application 08-406,457]

The Office used those words to attack Applicant, and has (and still does to the present day) pointed to cold fusion as if it were a forbidden word or religion, whereas it is simply one of several environments in which the present invention finds utility. In fact, 'cold fusion' was not even mentioned in many places such as the Abstract and claims, but was cited as a reference for possible use. The Office 'cherry picked' the words it wanted for unfair reasons.

Applicant mentioned other uses of the invention of '457 which includes the measurement of activity of a sample. He was ignored.

Applicant noted that the invention as correctly taught in the original specification and claims measures heat, therefore it was, and is, a measurement and --like the measurement of "lift" for an aerofoil (wing) or weight of an object-- it has great utility. He was ignored.

Applicant noted that the invention's ability to measure activity might involve a sample which does not show cold fusion. He was ignored.

Applicant noted that the invention was useful without 'cold fusion', and could even be useful for ruling out the presence of 'cold fusion'. He was ignored.

205. Thus, in '457, the Office led away from '457 (as it does for the present invention (vide supra; vide infra). Only by such impropriety and lack of the normal standards of review, did the Board ignore the present invention --a method to measure the activity of a sample -- an invention that obviously has utility and operability.

The rejection is untruthful because size (as it is relevant to multiring calorimetry) is discussed. The important engineering parameters are the specific heat (CZ12) , mass (MZ12), and effective thermal admittance [Y12]. These are discussed in the original specification, including on page 24, line 6, page 17, lines 2-12, page 17, lines 2-12, and especially in Figure 1, Figure 4, and Table 1 (Row 7, which lists the dimensions in millimeters). From beginning to end, the rejection ignores the original specification and claims systematically putting fraud onto a Federal document and corroding the Public's opinion of the Board's propriety.

Fact 26: Office Has Impugned The Applicant

206. It is an uncontested fact that the Examiner has wrongly and repeatedly impugned the Applicant, a Board Certified Physician, trained in surgery, biomedical engineering, electrical engineering and physics, who is highly knowledgeable about the subject which the Examiner purports to be "an expert judge" (background was not provided by Dr. Palabrica about himself regarding his qualifications). Instead, in the past on an application of which this is a continuation, the Examiner stated, ignoring what Applicant has written,

> **"There is no indication of the various possible errors and sources of errors including systematic errors, cumulative errors, instrumentation errors, etc. Such is necessary in determining the validity of applicant's conclusions or interpretation of the experimental results. This interpretation or even inadvertent misinterpretation of experimental data, as the case may be, goes to the heart of the matter. In any experiment, there will be errors (due, for example, to the instruments themselves since no instrument is 100% error free) and, there is data that must be collected and interpreted. Further, in any experiment, there will be errors introduced due to systematic or cumulative errors, since all instruments have some error in their measurements, the amount of error being dependent , for example, on the type and quality of the instrument. Clearly, if the results fall within the limits of experimental error, the results have no probative value. In the present case, applicant has neither identified all of the various errors nor has shown that his results fall outside the error limits. It is well known that the electrical/electronic instruments used by the applicant in the experiment, e.g., Keithley electrometer and the phototransistor, are inherently susceptible to drift (see References A and U). Applicant has neither shown that his experimental results are outside the error limits of the instrument nor that these results are not due to instrument drift. Applicant has not indicated what calibration was performed of the instruments, and if such calibration was performed prior to the experiment, whether the instrument calibration was checked after the experiment to ensure that the initial calibration remained valid."**

Despite what the Examiner has purported, there are no "errors" in the LANR work in the last several decades. The Examiner, the Board, and the court, are referred to

Miles, M. H. and M. Fleischmann, "Twenty Year Review of Isoperibolic Calorimetric Measurements of the Fleischmann-Pons Effect", 6, Proc. ICCF-14, ISBN: 978-0-578-06694-3, (2010).

eScience and Engineering of Hydrided Metals Series, Volume 2 - "Calorimetric ComplicationsThe Examination of the Phase-II Experiment and Other Select Calorimetric Issues, Ed. M. Swartz, JET Technology Press, Wellesley Hills, MA, ISBN 1-890550-02-7 (1999)

Swartz, M, 1996, "Improved Calculations Involving Energy Release Using a Buoyancy Transport Correction", Journal of New Energy, 1, 3, 219-221

Swartz, M, 1996, "Potential for Positional Variation in Flow Calorimetric Systems", Journal of New Energy, 1, 126-130

Swartz, M, 1994, "A Method To Improve Algorithms Used To Detect Steady State Excess Enthalpy", Transactions of Fusion Technology, 26, 156-159

Swartz, M, 1997, "Explanations for Some Differences Between Reports of Excess Heat in Solid State Fusion Experiments", J New Energy, 2, 1, 60-65.

Swartz, M,1993, "Some Lessons from Optical Examination of the PFC Phase-II Calormetric Curves", Vol. 2, Proceedings: "Fourth International Conference on Cold Fusion", 19-1, op. cit.

Swartz, M, 1996, "Definitions Of Power Amplification Factor", J New Energy, 2, 54-59.

Swartz, M. with Marwan, J, M. C. H. McKubre, F. L. Tanzella, P. L. Hagelstein, M. H. Miles, M. R. Swartz, Edmund Storms, Y. Iwamura, P. A. Mosier-Boss and L. P. G. Forsley, "A new look at low-energy nuclear reaction (LENR) research: a response to Shanahan", J. Environ. Monit., (2010)

Swartz, M., 1996, "Relative Impact of Thermal Stratification of the Air Surrounding a Calorimeter", Journal of New Energy, 2, 219-221 (1996)

207. What calibration is used by the Office to enforce Office rules and normal behavior? This is essentially an attack on Applicant by the Examiner, and its continuation after being addressed, is utterly unwarranted, completely without foundation, and consistent to the long term behavior and bad faith of the Examiner, as unrebutted Declaration after Declaration has now identified factually.

208. Asked to address this, when the onus was on the Examiner, instead of clear statements rebutting the detailed, precise, specific, substantive, Declaration-supported, factual and legally proper arguments of the Applicant in Applicant's Response of March 3, 2008 (including on pages 7 through 11 in Applicant's averments 17 and 18) to the previous Office Communication of December 7, 2007, the flawed December 15, 2008 Final was silent. Where is the Examiner's response to the Applicant's previous

nine (9) Arguments in this regard? It does not exist. Not to any of them. The Examiner failed to substantively address Applicant's detailed, substantive, arguments.

209. This proves discrimination and negligence by Dr. Palabrica. Applicant was trained at the Massachusetts Institute of Technology and Harvard, and has four degrees in electrical engineering over eighteen years, and with decades in practice. Dr. Palabrica has impugned the Applicant claiming that only the Applicant's equipment is suspect. Does Dr. Palabrica check every other applicant trained at MIT, every other physician and surgeon trained at Harvard and the Massachusetts General Hospital, or is this just further salient and plain Evidence of discrimination by Dr. Palabrica against the apparently-targetted Applicant.

210. The Applicant, Dr. Swartz, was the first to treat intrapericardial invasion by carcinoma successfully. Confer Swartz-EsophagFistula.pdf Mitchell R. Swartz has the degrees of BS, MS, EE, and ScD in Electrical Engineering from the Massachusetts Institute of Technology and an MD from Harvard Medical School. He served surgical internship, and radiation oncology residency and fellowship at the Massachusetts General Hospital, at the Laboratory for Insulation Research at MIT, and at several Boston hospitals, leading to contributions to PET imaging of human tumors, electrophotochemotherapy for treating human tumors and infectious organisms, and sensors using composites of biomaterials and semiconductors. Research continues on medical inventions, unusual dielectrics and poled ferroelectrics, and lattice assisted nuclear materials and devices to be used for propulsion, electricity production, and artificial internal organs. What is the basis for Dr. Palabrica impugning the Applicant regarding this matter?

211. There is the appearance of impropriety because there is significant and demonstrable reputable evidence of record to support that the invention does operate as indicated. Applicant has repeatedly undertaken the full burden coming forward with his evidence as required [In re Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444]. By ignoring Evidence and Declarations, the Examiner continues the appearance of impropriety as he ignores In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

Fact 27: The Office Utterly Failed Its Duty Not To Discriminate

212. The rejection for putative "lack of operability" or "enablement" under 35 U.S.C. §112, ¶1 and "lack of utility" under 35 U.S.C. §101 has only been made by ignoring the original specification and claims, by ignoring the timely-submitted unrebutted Declarations, by ignoring scores of Exhibits and references, and by ignoring the Office's own rules, and thus by the Office having created an arbitrary two-tier "standard of review" for patentability.

The following Declarations confirm this travesty against American citizens by the US Patent Office, and this Examiner.

The implications are quite serious.

Affidavit-143-Hagelsteinapp1.pdf
Affidavit-258-Ahern-2010
Affidavit-258-Hagelstein-2010.pdf
Affidavit-937-Fox-AmicusBrief-2001.pdf
Affidavit-937-Mallove-AmicusBrief-2000.pdf
Affidavit-937-McKubre-AmicusBrief-2001.pdf
Affidavit-937-Rotegard-AmicusBrief-2001.pdf
Affidavit-937-Valone-AmicusBrief-2001.pdf
Affidavit-976-AhernAff03.pdf
Affidavit-976-Bass-1996.pdf
Affidavit-976-Fox-1995.pdf
Affidavit-976-Rotegard-1994.pdf
Affidavit-976-Shaw-1996.pdf
Affidavit-Ahern-Letter-1996.pdf
Affidavit-Hagelstein-2007.pdf
Affidavit-Josephson-2004.pdf
Affidavit-Mallove-1994.pdf
Affidavit-Mallove-FromtheFront-2003.pdf
Affidavit-Mallove2Clinton-2000.pdf
Affidavit-Miles-Letter-1996.pdf
Affidavit-miranda-2003.pdf
Affidavit-NRLonSwartz-2006.pdf

213. There has been no honest due process by the Examiner before the Final. In the flawed December 15, 2008 Final by Examiner Palabrica, in place of a normal response in the Final either agreeing to --or rebutting-- the Applicant's extensive, arguments buttressed with foundation, the Examiner has instead only deigned to repeat identical already-shown-by-the-Applicant-to-be-flawed arguments from the previous flawed Office Communication of December 7, 2007. The Examiner has systematically ignored the specification and claims of the above-entitled application, just like he has ignored Applicant's detail, scientific, arguments. The bottom line is that Dr. Palabrica has responded to essentially none of the Applicant's arguments. There is almost no

evidence in the Final, typed in simple English, explaining how the Applicant's arguments have been considered in any way whatsoever. In almost every single case of relevant arguments from the 111 page March 3, 2008 Response, by the pro se Applicant, to the erroneous, disingenuous, Office Communication of December 7, 2007, they have been ignored.

214. As the Verner Declaration states:

"It is clear that the Examiner has failed to respond substantively to many of Dr. Swartz's arguments. The Examiner should have reasonably considered Dr. Swartz's replies, but did not."

As the Swartz Declaration states,

"7. The Examiner has systematically ignored the specification, just as he has ignored the arguments, the Declarations, the Exhibits, the published papers, the Office rules, and federal law. There is the appearance of impropriety in the actions of the Office and Dr. Palabrica."

215. The Examiner has been disingenuous. He knows that his combination of the other cited art is an improper one, because he misstates the present invention, and there is no showing in the references themselves that they can or should be so combined to produce any result such as produced by the above-entitled invention.

216. The Examiner has not given any foundation, in fact or law, to explain his failures to address the published relevant paper(s) and the unrebutted Declarations with specificity, precision, and substantive address to their points.

The Examiner should admit that said features are not "incredible" but can be elicited when using the teachings of the original specification and claims. Furthermore, there is documented existence of these reactions and the preferred environment in which the present invention does operate. Furthermore, there is documented existence of these reactions and the preferred environment in which the present invention does operate. The number of papers in this field demonstrating a need today for measuring loading confirms both the "operability" and "utility", and therefore "enablement", of this invention.

Fact 28: 2-Tiered Treatment Means Discrimination

217. The Office has ignored controlling authorities including the 14th Amendment, requiring an impartial tribunal [28 U.S. Code Section 144, Mayberry v. Penna., 91 S.8.; Bloom v. Illinois, 88 Ct. 499 S.Ct. 1477; Duncan v. Louisiana, 88 S.Ct.1444] and equal protection. In the light of the previously unrebutted Declarations [hereby again submitted] there appear to be violations of the 14th Amendment's "equal protection" clause [Frontiero v. Richardson, 93 S.Ct. 1736, 411 U.S. 677; Weiss v. Weiss, 436 N.Y.S. 2d. 862, 52 N.Y. 2d. 170 (1981)] with serious implications [Gass v. Lopez, 95 S. Ct 729; Wood v. Strickland, 95 S Ct 9S2: U.S. v. Price, 86 S Ct 1152, 1157, Footnote 7; Griffin v. Breckenridge, 91 S Ct 179D; Gamez v. Toledo, 42 U.S.C.§1983, and Bivens v. Six Unknown Named Agents of Fed. Bureau of Narcotics].

The Office has ignored controlling authorities including Article I, Section 2, by ignoring that Applicant is entitled to the privileges and immunities of citizens in the other states.

The Office has ignored controlling authorities including the reasoning of the Supreme Court in United States v. Nixon (1974) that all are "equal under the law".

218. The Office ignores that cold fusion patents in the very same field not allowed here issued No such demand was made of these other patents. Thus, the Office unfairly demonstrates two standards of review proving discrimination. The above conclusively proves the selective application of law -- and capricious attitude towards the Applicant of the above-entitled application -- by the Patent Office. Egregiously, this is a dual-tiered system which the Office has set up to usurp constitutional rights of the Applicant and certain American citizens with surnames, religion, or skin color not acceptable to the US Patent Office.

Fact 29: Office Ignored Its Own Witness To Harass the Applicant

219. It is an uncontested fact that the Office ignores its own witnesses. There is reputable evidence of record in the Office's past papers (now removed after they were cited) to support ... that the invention as disclosed is capable of operating as indicated and capable of providing a useful output.

Most importantly, the Office even ignores its own qualified witness, such as Dr. Rehn, U.S. Navy, who said

"Perhaps the clearest scientific fact, at this time, is the hardest for physicists to accept: nuclear reactions apparently do occur in deuterium-loaded Pd, Ti, and probably in other solids."

[Office of Naval Research Asian Office, NAVSO P-3580, Vol. 18, Jan. 1993].

220. Proof of operability of these inventions include the Declaration of operability by the late Dr. Mallove and the others, which are in the Appendices of the Appeal Brief, and also application SN 10/646,143, application SN 09/568,728, application SN 09/573,381, application SN 09/748,691, application SN 09/748,695, and application SN 09/750,765 (**).

** As the United States Court of Customs and Patent Appeals has stated:

"An original specification can also incorporate by reference subject matter disclosed in another patent application which is pending before the Patent Office and hence unavailable to the public."

[In re JOLLES; United States Court of Customs and Patent Appeals, 1980, 628 F.2d, 1322, 206 USPQ 885]

Fact 30: The Office Ignores Constitutional and Congressional Directive

221. The Office has ignored its controlling authorities beginning with Clause 8 of Section 8 [§8, cl. 8], Article I, which provides that "Congress shall have Power (t)o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries" by improperly eliminating an entire field involving energy and United States security.

The Office has ignored controlling authorities including Article I, Section 2, by ignoring that Applicant is entitled to the privileges and immunities of citizens in the other states. Specifically, the Examiner ignores that the Office has allowed selected cold fusion patents in the very same field not allowed here [eg.Widom and Larsen, Czirr(5,231,290), Westphal(5,215,631), Ahern (5,411,654), Patterson(5,036,031), (5,318,675), (5,372,688), (5,036,031); Aspden, UK-GB 2,231,195B]. This is a dual-tiered system which the Office has set up to usurp constitutional rights of the Applicant and American citizens.

222. The Office has rejected that the US Congress has mandated encouragement of science, and the Office's actions are inconsistent with the Patent Act of 1793, authored by Thomas Jefferson, which defined statutory subject matter as "any new and useful art, machine, manufacture, or composition of matter" Act of Feb. 21, 1793, 1, 1 Stat. 319, and with the Act which embodied Jefferson's philosophy that "ingenuity should receive a liberal encouragement." [447 U.S. 303, 309].

223. The Office has rejected that the US Congress has mandated progress. "The patent laws (reflect) this Nation's deep-seated .... need to encourage progress." [DIAMOND v. CHAKRABARTY, 447 U.S. 303 (1980), 447 U.S. 303, No. 79-136]

The Office has rejected that the Applicant is entitled to an impartial tribunal [28 U.S. Code Section 144, Mayberry v. Penna., 91 S.8.; Bloom v. Illinois, 88 Ct. 499 S.Ct. 1477; Duncan v. Louisiana, 88 S.Ct.1444] and equal protection of the laws and fair application of the standards of review.

Fact 31: UNDISPUTED FACT: The Office Planned from the Beginning to Discriminate

224. Why did the Patent Office fail to log all the relevant submitted Declarations in some of Applicant's cases before the Board of Patent Appeals?

The recently discovered SAW Memorandum has revealed that the Examiner and his group Art have acted in conspiratorial behavior encouraging systematic violations of 18 U.S.C. §1001.

The Office has used any means to harass the Applicant including false statements on federal documents mailed across state lines.

The Office has used any means to harass the Applicant including hiding and destroying publications and Declarations (Evidence).

The Office has used any means to harass the Applicant including being disingenuous about the present invention, the arguments of Applicant, and about the Declarations.

The Office has used any means to harass the Applicant including removing Evidence from the file folder (only caught in the federal court AFTER the Board of Patent Appeals.

The Office has used any means to harass the Applicant including the withholding of pro se Appeal Briefs from the Board of Patent Appeal.

Fact 32: Secret Predetermined Plan to not Allow

225. It is an uncontested fact that the Office has worked against the field of cold fusion, and every invention associated with it, targetting the Applicant while cashing every check over 22 years (tens of thousands of dollars paid by the Applicant alone for governmental service not rendered).

The Office has been disingenuous to both the Board of Patent Appeals AND the federal court by previously withholding Exhibits and Declarations.

The Office has systematically abused the Applicant by denying the right to patent an invention.

The Office cannot honestly admit there is no utility for an invention measuring energy-production and efficiency.

The Office's behavior has the appearance of impropriety.

The Office has removed Evidence from Applicant's files consisting of over 300 papers, over 30 of his own peer-reviewed papers (several published by the American Nuclear Society), and other art and Declarations demonstrating the PTO is wrong in their opinion.

226. The Applicant has repeatedly, and unsuccessfully, explicitly requested substantive, direct answers with specificity regarding the Office's basis in fact or law for its systematic errors, claims, opinions, and two-tiered system heralding discrimination.

The Office has never felt it necessary to respond with substance to each cited Declaration in a substantive, relevant, complete, and precise way. The unrebutted Declarations decimate the Office's opinion.

The Office's denial of the patent in their light heralds discrimination, disingenuity, and removal of due process and civil rights.

Fact 33: Appearance of Impropriety in the Office

227. The Office's actions and behavior do not comport with any notion of fair play or justice.

The Office's action are improper and void of compliance with the preexisting standards for review for patentability with respect to resolving operability by the Office. By ignoring standards of patentability, the decision is arbitrary, selective, and capricious and encourage discrimination and civil rights violations under color of law [U. S. v. Price, 86 S. Ct. 1152, 1157] including due process and Equal protection under the law [5Th Amendment and 14th Amendment] and other "equal protection" clauses [Frontiero v. Richardson, 93 S.Ct. 1736, 411 U.S. 677; Weiss v. Weiss, 436 N.Y.S. 2d. 862, 52 N.Y. 2d. 170 (1981)], with serious possible implications [Gass v. Lopez, 95 S. Ct 729; Wood v. Strickland, 95 S Ct 9S2: U.S. v. Price, 86 S Ct 1152, 1157, Footnote 7; Griffin v. Breckenridge, 91 S Ct 179D; Gamez v. Toledo, 42 U.S.C. §1983, and Bivens v. Six Unknown Named Agents of Fed. Bureau of Narcotics].

228. By systematic failure to use a uniform standard of review for patentability, by ignoring Declarants, and by ignoring its own rules for patentability, the Office has denied due process and thereby Equal protection under the law [United States v. Nixon, 418 U.S. 683 (1974)].

SUMMARY OF FACTS: Operability Under U.S.C. 112, first paragraph

229. There is compliance with 35 U.S.C.§112, first paragraph. The original specification and claims 1-20 (all claims) taught the subject matter defined by each of the rejected claims, set forth the best mode contemplated, and did distinctly point out and claim the subject matter which constitutes the invention. This was corroborated by unrebutted declarations, and supported by a peer-reviewed publication of additional probative reference. These Declarations and Exhibit corroborate the Applicant, and prove, that operability and utility were taught in the original specification and claims. The present invention has operability and utility based upon the record, and has been validated based upon Exhibits and, more importantly, Declarations in the record - which remain ignored. The original specification and claims complied and conformed with the Patent Act.

230. The Applicant patently taught in the original specification and claims how his apparatus works and claimed the invention which solves a long-standing problem. The Applicant taught the subject matter defined by each of the rejected Claims including how his apparatus and method works, distinctly pointed out and claimed the subject matter which constitutes the invention, included specification and drawings describing the subject matter as defined by each of the claims, wrote an adequate enabling disclosure with specification and drawings which set forth the best mode contemplated by the inventor for carrying out the invention as described by the above-entitled application which enable any person skilled in the art to make and use the subject matter as defined by each of the claims, and thus complied and conformed with 35U.S.C.§112, first paragraph, of the Patent Act.

231. Applicant has been willing to reveal to the public the substance of his discovery and "the best mode ... of carrying out his invention," 35 U.S.C. 112, and should be granted "the right to exclude others from making, using, or selling the invention throughout the United States," for a period of 17 years. 35 U.S.C. 154. In return, the federal patent system is supposed to encourage the creation and disclosure of new, useful, and non-obvious advances in technology and design in return for the exclusive right to practice the invention for a period of years [United States v. Dubilier Condenser Corp., 289 U.S. 178, 186 -187 (1933)].

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232. These peer-reviewed publications, Exhibits and Declarations prove Applicant was correct on the filing date of the application [In re Hogan, 559 F.2d 595, 60S, 194 USPQ 527, 537 (CCPA 1977)]. They prove that the Applicant taught the subject matter defined by each of the rejected Claims including how his apparatus and method works, set forth the best mode contemplated, distinctly pointed out and claimed the subject matter which constitutes the invention, wrote an adequate enabling disclosure, and thus complied and conformed with 35U.S.C.§112, first paragraph, of the Patent Act. This was done so that an artisan, or those skilled in the art, could practice it without undue experimentation [In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988), citing with approval Ex parte Forman, 230 USPQ 546, 547 (Bd. Pat. App. & Int. 1986)]. Applicant has now demonstrated that his invention as claimed was, and is, adequately described to one skilled-in-the-art. Said Declarations are sufficient in their factual content with respect to the significant evidence, and prove that the Examiner is in clear error. By submitting said peer-reviewed publications, showing the Applicant is correct, and said Declarations containing relevant facts by probative witnesses, the Applicant has now undertaken the full burden coming forward with his evidence as required [In re Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444].

233. Ignored (along with the evidence) yet again in the Examiner's Brief are the following standards of review. These were cited previously and no reason has been given by the Examiner for his deviation from said standards of review:

The Examiner ignores In re Prater, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969)] which requires the Examiner to refer to the claimed invention as the focus of its Office communication, but it did not when drifting toward criticism of "FP".

234. The Examiner ignores In re Morris which requires that the Examiner must respond to what Applicant meant, but he did not.

235. The Examiner ignores In re Hogan [559 F.2d 595, 60S, 194 USPQ 527, 537 (CCPA 1977)] which discusses that enablement must be judged on the original specification and claims, but in this Communication it was not.

236. The Examiner ignores In re Fouche [439 F.2d 1237, 1243, 169 USPQ 429, 434, (CCPA 1971) and In re Zletz [893 F.2d 319, 13 USPQ2d 1320 (Fed. Cir. 1989)] which state that an invention (in structure, operation and composition) is defined by the claims and the original specification.

237. The Examiner ignores In re Gazave, 54 CCPA 1524, 379 F.2d 973, 154 USPQ 92 (1967)] and In re Chilowsky [43 CCPA 775, 229 F.2d 457, 108 USPQ 321 (1956)] which require consideration of the material which Applicant supplied and cited.

238. The Examiner ignores In re Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444 which requires the Examiner to substantively respond with a *prima facie* case of unpatentability. However, after the submission of Swartz, 1998, Improved Electrolytic Reactor Performance Using π-Notch System Operation and Gold Anodes, Transactions of the American Nuclear Society, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85 and Swartz(97), other peer-review papers, and the Declarations, the burden shifts back to the Office and can only discharged by the Examiner "presenting evidence or reasons why persons skilled-in-the-art would not recognize in the disclosure a description of the invention defined by the claims" [Wertheim, 541 F.2d at 263, 191 USPQ at 97]. Applicant asks that this be done with specificity, substantivity, and with explicit reference, and in detail with full findings of fact.

239. The Examiner ignores In re Brana and In re Eltgroth, 419 F.2d 918, 164 USPQ 221 (CCPA 1970) which demand that the Examiner must establish a reason to doubt an invention's asserted utility, and the loading of an isotopic fuel into a material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material and means to extract product using magnetic field inhomogeneity, based differential magnetic susceptibilities [cf. Swartz and Straus Declarations] is not 'incredible' or 'unbelievable' like the Examiner appears to purport. This invention is quite believable.

240. The Examiner ignores In re Vaeck [947 F.2d 488, 495-96, 10 USPQ2d 1438, 1444 (Fed. Cir. 1991)] which states that an enablement rejection under section 112,¶1 is only appropriate where the written description fails to teach those skilled-in-the-art, like the Declarants, to make and use the invention.

241. The Examiner ignores Rule 132 which requires Applicant's solid, substantial, and timely, evidence submitted against the Examiner's rejections be considered because "(p)atentability is determined on the totality of the record, by a preponderance of the evidence with due consideration to persuasiveness of argument." [Id. at 1445, 24 USPQ2d at 1444]. Applicant has published his inventions, proving that this invention

was correctly taught in the original specification and claims, on the filing date of the application.

242. The Examiner has ignored controlling authorities including Clause 8 of Section 8, Article I, by improperly eliminating an entire field involving energy and United States security.

243. The Examiner has ignored controlling authorities including Article VI, by interfering laws passed by Congress [DIAMOND v. CHAKRABARTY; 447 U.S. 303, 309] including that patentable statutory subject matter spans "anything under the sun that is made by man" [S. Rep. No. 1979, 82d Cong., 2d Sess., 5 (1952); H. R. Rep. No. 1923, 82d Cong., 2d Sess., 6 (1952)].

244. The Examiner has ignored controlling authorities including Article I, Section 2, by ignoring that Applicant is entitled to the privileges and immunities of citizens in the other states. Specifically, the Examiner ignores that the Office, Europe and Japan have allowed selected other patents in the very same field not allowed here [Czirr(5,231,290), Westphal(5,215,631), Ahern(5,411,654), Patterson(5,036,031), (5,318,675), (5,372,688), (5,036,031); Aspden, UK-GB 2,231,195B]. This is a dual-tiered system. No such demand was made of these other patents. There appear to be two different standards of review. Therefore, the Examiner has ignored controlling authorities including the reasoning of the Supreme Court in United States v. Nixon (1974) that all are "equal under the law". Hence, the Examiner has ignored controlling authorities including the 14th Amendment, requiring an impartial tribunal [28 U.S. Code Section 144, Mayberry v. Penna., 91 S.8.; Bloom v. Illinois, 88 Ct. 499 S.Ct. 1477; Duncan v. Louisiana, 88 S.Ct.1444] and equal protection. In the light of the previously unrebutted Declarations [hereby again submitted] there appear to be violations of the 14th Amendment's "equal protection" clause [Frontiero v. Richardson, 93 S.Ct. 1736, 411 U.S. 677; Weiss v. Weiss, 436 N.Y.S. 2d. 862, 52 N.Y. 2d. 170 (1981)] with serious implications [Gass v. Lopez, 95 S. Ct 729; Wood v. Strickland, 95 S Ct 9S2: U.S. v. Price, 86 S Ct 1152, 1157, Footnote 7; Griffin v. Breckenridge, 91 S Ct 179D; Gamez v. Toledo, 42 U.S.C.§1983, and Bivens v. Six Unknown Named Agents of Fed. Bureau of Narcotics].

Legal Arguments - Claim Rejections under "DUAL REJECTION"

255. "Enablement" is a legal decision, whereas "operability" and "utility" are factual matters. In Patent Law, 35U.S.C.§112,¶1 and 101 are often linked - dual rejection. That dual rejection here, today, is satisfied for any of the several reasons listed above.

> **"The how to use prong of ¶112 incorporates as a matter of law the requirement of 35U.S.C. §101 that the specification disclose as a matter of fact a practical utility for the invention."**
> [In re Ziegler, 992 F.2d 1197, 1200, 26 USPQ2d 1600, 1603 (Fed. Cir. 1993)].

256. "Enablement" is a question of law (confer In re Fouche [439 F.2d 1237, 1243, 169 USPQ 429, 434, (CCPA 1971)])], or present evidence for the shifts and drift. 35 U.S.C. 112, first paragraph deals with 'operability' issues. 35 U.S.C. 101 deals with 'utility' issues. When both fact issues are met, the legal judgment of 'enablement' results.

CONCLUSION: Operability Under U.S.C. 112, first paragraph

257. In summary, and most importantly, Examiner should have considered, and commented upon substantively, the submitted evidence including:

> **#1) Declarations from scientists of ordinary skill-in-the-art, who considered the specification and stated that the written description was sufficient. Applicant is acknowledged by those involved in the state-of-the-art (Lin 97, Fox 97, Fox 96A, Rothwell 96). Said evidence shows that the Office's position is in error.**

> **#2) The published peer-reviewed scientific articles [including Swartz, 1998, Improved Electrolytic Reactor Performance Using π-Notch System Operation and Gold Anodes, Transactions of the American Nuclear Society, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85 and Swartz(92, 94A, 97A, 97C)].**

258. By ignoring such evidence consisting of Declarations, and peer-reviewed publications, the Examiner also ignores In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988) which indicates that #1 or #2 are sufficient to demonstrate that the specification provides an adequately written description of the subject matter, including how to operate the invention, and claimed the invention so that an artisan, or those skilled-in-the-art, could practice it without undue experimentation. Either #1 or #2 prove that enablement, utility, and validation. Together, #1 and #2 have been

submitted and Applicant submits that these together corroborate enablement of the present invention both *de facto* and *de jure*.

259. Therefore, in accordance with the foregoing arguments, the Appellant has conformed with the requirements of sections 112 of the Patent Act, and reversal of the rejection of all claims is respectfully requested, as required by the statute (35 USC 112) because the specification and all claims are compliant under 35 U.S.C. 112, first paragraph, and because said claims contain subject matter which was described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, and because there is a written description in the specification able to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, toward possession of the claimed invention.

ARGUMENTS - 35 USC §112 Second Paragraph - PURPORTED INDEFINITENESS

260. The Office states,

"Claims 1,5-8, 10-14 and 21-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which appellant regards as the invention. The claims are vague, indefinite and incomplete."

The Examiner is not accurate for any of several reasons. Appellant respectfully notes that this was discussed in the previous Communication with the Examiner on pages 14 through 16 and also pages 91 through 95 where it was discussed through the prism of those skilled-in-the-art. Where is the Examiner's response?

261. For each rejection under 35 U.S.C. 112, second paragraph, the Appellant hereby does fully and completely specify the errors in the rejection and how the claims particularly point out and distinctly claim the subject matter which applicant regards as the invention.

262. First, simply put, all rejected claims (and all claims) conform with 35 U.S.C. 112, second paragraph. This can be shown any of many ways as discussed in detail below.

263. Second, the Examiner is shown to be wrong by Declarations, by publications, by even the federal decision and Board of Patent Appeal which had no trouble under-tanding the invention. As the Evidence makes obvious, putative "indefiniteness" under 35 U.S.C. §112, ¶2 has only been made by ignoring the reasoning of several decisions already in the record, ignoring the Office's own rules, and what those who were skilled-in-the-art at the time the original specification and claims were filed have stated [In re Morris, 96-1425 (Fed Cir, 18 Aug 1997)] in unrebutted Declarations [In re Marzocch (439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971)], which were timely submitted as required [In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)], and which fully addressed all matters criticized by the Office regarding matters of fact.

264. Third, the Examiner is reminded that the Office's notion is flawed and the Office has a history of being overturned by the Board of Patent Appeals on this issue (confer '143). There IS definiteness because acceptability of the claim language depends on whether one of ordinary skill-in-the-art would understand what is claimed, and that is confirmed by the light of the specification, the Declarations, the Amicus Briefs (which were not allowed into the Court because of objections by the attorney for the Examiner) [Ex parte Porter, 25 USPQ2d 1144, 1145 (Bd. Pat. App. & Inter. 1992)] and the other corroboratory expert testimony [Ex parte Gray, 10 USPQ2d 1922, 1928 (Bd. Pat. App. & Inter. 1989)].

265. The appealed claims do not stand or fall together. Claims 1, 10, and 21 are separately patentable and do not stand or fall together because they are materially distinct with respect to 35 USC 112 second paragraph. Claims 1, 10, and 21 are separately patentable because they are not unduly multiplied, have separate limitations, and are required because the invention described by the original specification of the above-entitled application is very complex.

Claims are Compliant with 35 U.S.C. §112 ¶2

DefiNIteNESS CORROBORATED by Language

266. It is disingenuous for the Examiner to claim there is indefiniteness. "**...(I)ndefiniteness in claim language is of semantic origin**" [In re Hammack, 427 F.2d 1384 n.5, 166 USPQ 209 n.5 (CCPA 1970)] because indefiniteness is the opposite of definiteness. Definiteness is a characteristic of a patent claim in which claim language makes the scope of the claim clear to a person skilled in the art to which the invention pertains [MPEP 2173, MPEP 2173.02, MPEP 2173.05(a)]). Pursuant, to MPEP 2173, Applicant claimed with particularity, and did point out and distinctly claim the

invention. Applicant's claims are therefore definite because the claims are precise, clear, correct, and unambiguous to a person skilled-in-the-art and, therefore, there was definiteness. The specification did conclude claims particularly pointing out and distinctly claiming the subject matter. Applicant has fully complied with the definiteness requirement of the second paragraph of 35 U.S.C.§112. The original specification and claim adequately presented the claimed invention so that an artisan, or those skilled in the art, could practice it without undue experimentation [In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed.Cir.1988)].

DefiNIteNESS CORROBORATED by DECLARAnts

267. The Examiner has not responded to the fact that Definiteness is proven by way of Applicant's previously-submitted expert testimony [Ex parte Gray, 10 USPQ2d 1922, 1928 (Bd. Pat. App. & Inter. 1989)], including Declarations and Amicus Curiae Briefs. The simple proof is that there has never been a problem for the Examiner in this regard, or with the Declarants who are skilled-in-the-art, or even with the court [In re Swartz 00-1107 and In re Swartz 00-1108]. The Examiner must accurately discuss the invention as it is actually taught in the original specification and claims. The claimed invention should be the focus of the definiteness requirement.

268. Definiteness is corroborated by the unrebutted Declarants which in the past have all been ignored, maligned, and misquoted by the Examiner. These Declarants (with probative value) have fully addressed all matters criticized by the Office [In re Gazave; In re Chilowsky; In Re Jolles]. The Declarants prove that a person of ordinary skill-in-the-art understood the Applicant to have been in possession of the claimed invention at the time of filing, and demonstrate that the original specification and claims were precise, clear, correct, and unambiguous [pursuant to MPEP 2173.05(a)].

Undisputed Fact: Definiteness Corroborated by Unrebutted Declarations

269. The above-entitled invention has obvious definiteness, as confirmed by the unrebutted Declarations. The Declarations and Amicus Curiae Briefs are relevant to the above-entitled action and are again cited, referenced, and incorporated, by the pro se litigant. There is substantial, vast, evidence of definiteness in the form of expert testimony from Drs. Chubb, Mallove, Fox, Bass, Swartz and Mr. Straus, Rotegard, and Valone and others with their substantial arguments. Attention is directed to the Amicus Curiae Brief of Hal Fox [5/8/02], Declaration of Hal Fox [5/16/95], Declaration of Hal Fox [8/14/01], Amicus Curiae Brief of Eugene Mallove [5/8/02], Declaration of Eugene Mallove [5/6/94], Declaration of Scott Chubb [8/13/01], Declaration of Mr.

Rotegard [5/15/94], Amicus Curiae Brief of Mr. Rotegard [2/21/01], Straus Declaration of [5/22/94], Straus Declaration [November 27, 1992], Amicus Curiae Brief of Drs. Edmund Storms [2/21/01], Amicus Curiae Brief of Talbot Chubb [2/22/01], and the Amicus Curiae Brief of Thomas Valone [2/24/01]. The Affiants each have probative value, and each was as discussed in their respective Declarations and Amicus Curiae Briefs. They were each shown to be qualified as an expert with respect to the subject matter to which they testified, such as the field in which the above-entitled invention does operate and in the normal lawful mode in which the U.S. Patent Office should operate.

Applicant has undertaken (again) the full burden of coming forward with his evidence before the Final, as required [In re Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444].

Undisputed Fact #34: Definiteness Corroborated by Peer-reviewed Publications

270. Definiteness is corroborated by Applicant's peer-reviewed publications which demonstrate acceptability of the claim language to those of ordinary skill-in-the-art. The publications are ignored by the Examiner who rejects the reasoning of Atmel Corp. v. Information Storage Devices Inc. [Fed. Cir., No. 99-1082, 12/28/99.

271. The usefulness of the original specification was demonstrated to be correct at the time of the original filing in Fusion Technology (of the American Nuclear Society) and elsewhere which demonstrate operability and utility [validation]. These include, but are not limited to, the following: Swartz (1998), Improved Electrolytic Reactor Performance Using π-Notch System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85, Swartz. (1997), Fusion Technology, 31, 63-74.

272. The Examiner has not responded to the fact that the peer-reviewed reference support definiteness [Swartz (1992), Swartz (1994A), SWARTZ (1994B), Swartz (1997A), Swartz (1997B), SWARTZ (1998A)] which prove understanding by one skilled in the art [Atmel Corp. v. Information Storage Devices Inc., Fed. Cir., No. 99-1082, 12/28/99].

♦

Definiteness Corroborated by The Claims

273. The proof of conformity with 35 U.S.C. 112, second paragraph can be understood by examining Claim 1.

Claim 1. In a process for producing a product using a material loaded with an isotopic fuel, a method to control the production of said product which includes in combination:

applying an electric field to load said isotopic fuel to said material,

loading said isotopic fuel into said material,

applying a second electric field in a non-parallel direction to the first applied electric fields,

producing redistribution of said isotopic fuel within said loaded metal,

thereby controlling the product produced.

The process steps are able to each stand alone. They are easily understood as the Declarations prove. Each step is reasonable and has operability. Each step is able to each stand alone (MPEP 2111.02) with respect to operability. Compliance is obvious and demonstrated line by line - and the result is a method of considerable utility.

274. The Examiner has not responded to the fact that there is definiteness because the pending claims must be given the broadest reasonable interpretation consistent with the specification [In re Prater, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969), also MPEP Section 2111 - Section 2111.01] and the specification stated the meaning of the terms in the claims [In re Zletz, 893 F.2d 319, 13 USPQ2d 1320 (Fed. Cir. 1989)]. Furthermore, there is definiteness because pursuant to 2173.05(a) the meaning of every term used in the claims was apparent from the prior art, cited art, and from the specification and drawings at the time the application was filed. There is definiteness because the claims must each be given the broadest reasonable interpretation consistent with that which one who is skilled-in-the-art would reach [In re Morris]. In this case, it is corroborated by both the Declarations, Amicus Briefs, and peer-reviewed publications.

Definiteness Is Corroborated by The Specification which Defined the Terms in the Claims

275. "... (I)ndefiniteness in claim language is of semantic origin" [In re Hammack, 427 F.2d 1384 n.5, 166 USPQ 209 n.5 (CCPA 1970)]

and to further continue, indefiniteness is the opposite of definiteness. Definiteness is a characteristic of a patent claim in which claim language makes the scope of the

claim clear to a person skilled in the art to which the invention pertains [MPEP 2173, MPEP 2173.02, MPEP 2173.05(a)]).

276. The invention at issue in this case, '691, claimed by Claims 1, 5-8, 10-14, 21-30, is generally speaking a method to control hydrogen loaded into a metal such as palladium. Such loading by hydrogen occurs much as a sponge fills (loads) with water. This invention uses the hydrogen as a fuel, and for each device usually one isotope of hydrogen (protium or deuterium) is chosen (loaded into nickel or palladium, respectively).

The invention is a method to control the production of the desired products (such as heat) which includes in combination loading the hydrogen using a first applied electric field, and then at a later point in time applying a second electric field to redistribute said isotopic fuel within said material, with means to obstruct the flow of the loaded hydrogen.

Thus, as the original specification states (page 1, lines 7-8), this subject matter is defined as a method

"to control reactions involving isotopic fuels within a material, such as hydrogen within palladium."

As the original specification states (page 2, lines 16-21), the subject matter involves a loaded material ...

"... such as palladium which has been electrochemically loaded with deuterium, but it has relevance as well, to hydrogen loading, nuclear fusion, and other reactions in loaded metals such as titanium or palladium filled with deuterium, and to the broader field of metallurgy and engineering in or about metals, including Groups IVb, Vb, and some rare earths."

As the original specification states (page 1, lines 10-12), ...

(t)he method and apparatus uses at least two non-parallel electric-fields to control the loading into the material and redistribution of the isotopic fuel within the material."

As the original specification states (page 3, lines 4-14), the present invention is quite useful to those skilled in the art because present typical methods of loading have

"... problems. First, the desired reactions are not well controlled. The proven difficulties of loading, the slow initiation of the desired reactions, and the difficulty in controlling the reactions has limited research and development of this technology. Second, prior to the desired reactions, the cathodes must be filled with deuterons to concentrations which require significant times of charging. Third, palladium, the preferred metal of these reactions, is expensive. Fourth, the rates of the desired reactions are very low in the steady state."

In addition, the present invention, is useful, because it will enable any person skilled in the art to make and use the subject matter defined by each of the rejected claims (original specification states (page 3, lines 17-22) so as to

'to control and enhance desired reactions. ... minimize the required quantity of expensive palladium used ... (and) maximize the local quantity of the hydrogen within the palladium."

The original specification teaches (page 4, line 26 through page 5, line 3), the best mode contemplated by the inventor of carrying out his invention

" ...label 1 represents the metallic cathode, usually palladium in the preferred configuration. ... The label 7 represents the anode which in the preferred embodiment is composed of palladium. The label 6 represents the solution consisting in the preferred embodiment of a gel containing antidesiccant, in combination with LiOD, palladium salts, and heavy water (D2O). "

As the original specification teaches (page 5, lines 5-12) for those skilled in the art the subject matter defined by each of the rejected claims.

"The power supply and control unit consists of a current source and reactor control device as described in Swartz (1989) ... capable of filling the cathode with deuterium from an aqueous solution, or one enabling deuterated metals loaded by codeposition of deuterium and palladium."

As the original specification teaches (page 5, lines 7-9), the best mode contemplated by the inventor of carrying out his invention

"The application of said power source creates an applied electric field intensity which produces cation flow towards the cathode."

The original specification (page 5, lines 9-12), continues with the teaching of

"There results in the near cathode solution (labelled as 5 in figure 1) a buildup of deuterons, and a low dielectric constant (gas bubble) layer. The bubbles are labelled as number 10 in figure 1. There may be spikes or on the cathode (labelled as 11 in figure 1)."

The original specification teaches (page 5, lines 14-17), the best mode contemplated by the inventor of carrying out his invention using the first applied electric field intensity (referring to the figures).

"Figure 2 is a crossectional drawing .... (t)his device has two orthogonal applied electric fields. The first (labelled E-field number 1 in the the figure) is that which is applied to charge the palladium with deuterons."

The original specification continues (page 5, lines 17-22) with the best mode contemplated by the inventor of carrying out his invention using the second applied electric field intensity.

"The second applied electric field intensity is delivered after full charging has been achieved. In the figure the anode and cathode are labelled as 7 and 1. The electrolyte solution or gel is labelled as 6. The connections for the first electric field are labelled as 81 and 82. The connections for the second electric field are labelled as 85 and 86. The mechanical casing is labelled 20."

The original specification teaches (page 5, lines 23-25) the best mode contemplated by the inventor of carrying out his invention with respect to the impermeable barrier (referring to the figures).

"The deuteron impermeable barrier is comb-shaped in this preferred configuration, and is labelled 55 in figure 13."

The original specification teaches (page 6, lines 1-5) and elaborates for those skilled in the art to make and use the subject matter defined by each of the rejected claims.

"The cathode in this preferred configuration is divided into parallel slabs. Between these slabs alternate deuteron-impermeable barriers. Application of the second electric field causes the deuterons already loaded in the cathode to redistribute, but the deuteron-impermeable barrier(s) act to enhance the desired reactions."

As the original specification teaches (page 6, lines 7-13), the best mode contemplated by the inventor of carrying out his invention

"Each device is equipped with orthogonal applied electric fields. The second applied electric field intensity is delivered after full charging. These devices each contain a cathode (labelled 1), intradevice gel containing lithium and palladium deuteroxide (labelled 6), and anode (labelled 7)."

The original specification teaches (page 7, lines 1-4), the best mode contemplated by the inventor of carrying out his invention

"The result is the piling up of deuterium at the deuteron-impermeable barriers (labeled 55). The heat energy is directed out via the the heat pipes and the thermal bus."

In one embodiment, as the original specification continues, detailed instructions are taught for producing the desired result (page 6, lines 15-24),

"These CAM devices are inserted, similar to a fuse onto a holding board, held in place by clips ... The three CAM device are connected to a microprocessor control system... Said apparatus has an electrical bus to connect the anodes which are connected to the anodic connectors (labelled

82). Said apparatus has an electrical bus to connect the cathodes ... The cathodic system buses (106 and 107) are electrically shorted together during the deuterium charging."

In another embodiment, as the original specification teaches, the heat product is removed (page 6, lines 26-28),

"Said apparatus has a thermal bus connected to the heat pipes which are held in a mechanical connecting system (labelled 20)."

277. The original specfication describes the subject matter defined by each of the rejected claims, and enables any person skilled in the art to make and use the subject matter defined by each of the rejected claims, and sets forth the best mode contemplated by the inventor of carrying out his invention.

Additional REASON OVERCOMING THE EXAMINER'S POSITION - DEFINITENESS PROVE BY OTHER REJECTIONS

278. Applicant notes to the Examiner that there had to have been definiteness because the Examiner could not have made the previous rejections under 35 U.S.C. 102 had the invention truly been without definiteness. Applicant reserves the right to Petition this matter, especially in the light of the un-rebutted ignored Declarations.

DEFINITENESS SUPPORTED BY THE Office Rules

279. The Examiner has not responded to the fact that there is definiteness consistent with Office Rules. The preamble of claim 1 recites the purpose of the process, and the process steps are able to stand alone (MPEP 2111.02). Pursuant to 2173.05(b), the fact that claim language may not have been precise cannot automatically render the claim indefinite under 35 U.S.C. 112, second paragraph [Seattle Box Co., v. Industrial Crating & Packing, Inc., 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984)].

Undisputed Fact: Definiteness Is Corroborated by the court ('970)

280. Definiteness is corroborated by the fact that this was understood by the Previous Examiner Wasil, the many Declarants, and even the Federal Appellate Court and Board of Patent Appeals. The previous Examiners (and there have been several) have used these words for more than two decades without any trouble -- until the matter was overhauled tongue-in-cheek and nunc pro tunc by the present Examiner. It is disingenuous for the Examiner to claim there is indefiniteness in the light of the many missives with the previous Examiner, Daniel Wasil, and in the light of the peer-reviewed cited publications, and in the light of the Declarants, affiants, and Amicus Curiae who are skilled-in-the-art, and especially in the light of the federal court which had no trouble understanding the invention.

281. Applicant obeyed the Examiner and submitted Amendments as he demanded. The words "heat" and "nuclear" were only added after the Examiner demanded it in his previous Communication, and they are --in fact-- exactly consistent with the Examiner's very own comment where he said what this invention involved. The entire original specification and claims involved heat and heat removal and the like.

THE EXAMINER'S SUGGESTION FOR THE CHANGE:

"Claims 1, 10 and 21 are vague, indefinite and incomplete as to what is actually the product. (Note this specific rejection that applied to previous claims 1-14 was not addressed in Applicant's response to the previous Office Action)."

[Examiner Palabrica, previous Communication to Applicant, 2/3/03]

282. To comply pursuant to the Examiner's suggestion, Claim 1 was amended in the Applicant's previous response of March 24, 2003, as follows:

1. (Amended) **In a process for producing heat or a nuclear product using a material loaded with an isotopic fuel, a method to control the production of said product which includes in combination:**
applying an electric field to load said isotopic fuel to said material,
loading said isotopic fuel into said material,
applying a second electric field in a non-parallel direction to the first applied electric fields,
producing redistribution of said isotopic fuel within said loaded metal,
thereby controlling the product produced.

The change was minor, was in response to the Examiner (supra), and involved NO NEW MATERIAL and is consistent with Examiner's own statement in his previous Communication to Applicant dated 2/3/03.

THE EXAMINER'S STATEMENT PROVING THIS IS NOT NEW MATERIAL

"In the current application the Applicant does not define the products of the claimed process and apparatus....the only possible "products" that can be formed in the claimed invention are nuclear fusion products. "

[Examiner Palabrica, previous Communication to Applicant, 2/3/03]

283. Therefore, given the Examiner's own statement (supra), and the original specification and claims consistent with this very material, and the entire previous docket with Examiner Wasil discussing this material, and the submitted Declarations discussing this material, truthfulness, and the normal standards of review, demand that this not be regarded as new material. For the Examiner to call "heat" and "nuclear" products "new" i) AFTER HE DEMANDED IT and ii) when they are both in the original specification and claims, is --with all due respect-- disingenuous.

284. Next, attention of the Examiner is directed to claim 5. The word "said" replaced the word "the" after the Examiner demanded it in his previous Communication.

THE EXAMINER'S SUGGESTION FOR THE CHANGE:

"Claims 5 and 22 recite The limitation "the group". There is insufficient antecedent basis for this limitation in the claims."

[Examiner Palabrica, previous Communication to Applicant, 2/3/03]

285. To comply pursuant to the Examiner's suggestion, Claim 5 was amended in the Applicant's previous response of March 24, 2003, as follows:

Claim 5 has been amended as follows:

5. (Amended) **In a method as in claim 1, where said ~~the~~ isotopic fuel is a member of the group consisting of an isotope of hydrogen, boron, lithium, or potassium.**

The change was minor, and was in response to the Examiner (supra), and involved NO NEW MATERIAL.

286. Next, attention of the Examiner is directed to claim 10. The words "heat" and "nuclear" were only added after the Examiner demanded it in his previous Communication, and they are --in fact-- exactly consistent with the Examiner's very own comment where he said what this invention involved. The entire original specification and claims involved heat and heat removal and the like.

THE EXAMINER'S SUGGESTION FOR THE CHANGE:

"Claims 1, 10 and 21 are vague, indefinite and incomplete as to what is actually the product. (Note this specific rejection that applied to previous claims 1-14 was not addressed in Applicant's response to the previous Office Action).

[Examiner Palabrica, previous Communication to Applicant, 2/3/03]

287. To comply pursuant to the Examiner's suggestion, Claim 10 was amended in the Applicant's previous response of March 24, 2003, as follows:

10. (Amended) **In a process for producing heat or a nuclear product using a material by a reaction, a method to control the redistribution of isotopic fuel loaded into said material which includes in combination:**
applying an electric field to load said isotopic fuel into said material,
applying a second electric field to said material loaded with said isotopic fuel,
thereby effecting redistribution of said isotopic fuel.

The change was minor, was in response to the Examiner (supra), and involved NO NEW MATERIAL and is consistent with Examiner's own statement in his previous Communication to Applicant dated 2/3/03.

THE EXAMINER'S STATEMENT PROVING THIS IS NOT NEW MATERIAL

"In the current application the Applicant does not define the products of the claimed process and apparatus....the only possible "products" that can be formed in the claimed invention are nuclear fusion products. "

[Examiner Palabrica, previous Communication to Applicant, 2/3/03]

288. Therefore, given the Examiner's own statement (supra), and the original specification and claims consistent with this very material, and the entire previous docket with Examiner Wasil discussing this material, and the submitted Declarations discussing this material, honesty and the normal standards of review demand that this not be regarded as new material. For the Examiner to call "heat" and "nuclear" products new i) AFTER HE DEMANDED IT and ii) when they are both in the original specification and claims, is --with all due respect-- improper.

289. Next, attention of the Examiner, and if necessary Commissioner and Court, is directed to claim 21. The words "heat" and "nuclear" were only added after the Examiner demanded it in his previous Communication, and they are --in fact-- exactly consistent with the Examiner's very own comment where he said what this invention involved. The entire original specification and claims involved heat and heat removal and the like.

THE EXAMINER'S SUGGESTION FOR THE CHANGE:

"Claim 21 recites in the ,rireamble a method to effect redistribution of said isotope of hydrogen, whereas the body of the claim recites "thereby distributing said isotope of hydrogen within said loaded metal." It is unclear which of the recited steps produces the isotope redistribution."

[Examiner Palabrica, previous Communication to Applicant, 2/3/03]

290. To comply pursuant to the Examiner's demands, Claim 21 was amended in the Applicant's previous response of March 24, 2003, as follows:

Claim 21 has been amended as follows:

21.(Amended) **In a process for producing heat or a nuclear product using a metal loaded with an isotope of hydrogen, a method to effect redistribution of said isotope of hydrogen in said material which includes in combination:**
applying an electric field to load said isotope of hydrogen into said metal,
loading said metal with said isotope of hydrogen,
thereafter applying a second electric field in a non-parallel direction to the first applied electric field; to thereby distribute~~ing~~ said isotope of hydrogen within said loaded metal.

The change was minor, was in response to the Examiner (supra), involved NO NEW MATERIAL and is consistent with Examiner's own statement in his previous Communication to Applicant dated 2/3/03.

THE EXAMINER'S STATEMENT PROVING THIS IS NOT NEW MATERIAL

"In the current application the Applicant does not define the products of the claimed process and apparatus....the only possible "products" that can be formed in the claimed invention are nuclear fusion products. "

[Examiner Palabrica, previous Communication to Applicant, 2/3/03]

291. Therefore, given the Examiner's own statement (supra), and the original specification and claims consistent with this very material, and the entire previous docket with Examiner Wasil discussing this material, and the submitted Declarations discussing this material, honesty and the normal standards of review demand that this not be regarded as new material. For the Examiner to call "heat" and "nuclear" products new i) AFTER HE DEMANDED IT and ii) when they are both in the original specification and claims, is --with all due respect-- egregious.

292. Next, attention of the Examiner, and if necessary Commissioner and Court, is directed to claim 22. The word "said" replaced the word "the" after the Examiner demanded it in his previous Communication.

THE EXAMINER'S SUGGESTION FOR THE CHANGE:
"Claims 5 and 22 recite The limitation "the group". There is insufficient antecedent basis for this limitation in the claims."
[Examiner Palabrica, previous Communication to Applicant, 2/3/03]

293. To comply pursuant to the Examiner's suggestion, Claim 22 was amended in the Applicant's previous response of March 24, 2003, as follows:
Claim 22 has been amended as follows:
22. (Amended) **In a method as in claim 21, where <u>said loaded</u> ~~the~~ material is a member of the group consisting of palladium, titanium, or nickel or their alloys.**
The change was minor, was in response to the Examiner (supra), involved NO NEW MATERIAL.

294. Next, attention of the Examiner, and if necessary Commissioner and Court, is directed to claims 24, 26, and 28. The word "stopped by" replaced the word "impact" <u>after the Examiner demanded it in his previous Communication</u>.

THE EXAMINER'S SUGGESTION FOR THE CHANGE:
"New claims 24, 26 and 28 recite the limitation of "having said redistribution of said isotopic fuel impact a barrier impermeable to said isotopic fuel." There is neither a written description nor an enabling disclosure of: a) what exactly is meant by the term, "impact"; by how and in what manner such redistribution causes the so-called impact a fuel-impenetrable barrier"
[Examiner Palabrica, previous Communication to Applicant, 2/3/03]

295. To comply pursuant to the Examiner's suggestion, Claims 24, 26, and 28 were amended in the Applicant's previous response of March 24, 2003, as follows:
24.(Amended) **In a method as in claim 21, where the additional step is taken of having said redistribution of said isotopic fuel <u>stopped by</u> ~~impact~~ a barrier impermeable to said isotopic fuel.**

Claim 26 has been amended as follows:
26.(Amended) **In a method as in claim 1, where the additional step is taken of having said redistribution of said isotopic fuel <u>stopped by</u> ~~impact~~ a barrier impermeable to said isotopic fuel.**

Claim 28 has been amended as follows:
28. (Amended) **In a method as in claim 10, where the additional step is taken of having said redistribution of said isotopic fuel <u>stopped by</u> ~~impact~~ a barrier impermeable to said isotopic fuel.**

The changes were minor, were in response to the Examiner (supra), and involved NO NEW MATERIAL. What does the Office want the Applicant to do? Such behavior by the Examiner, in the light of the Office failing to enforce standards of review and accountability, are probably not appropriate for the Office or any other Federal agency. To the contrary, assistance of, and help for, a citizen of the USA would be more appropriate.

Conclusion

296. The Office has made an improper and reversible rejection under 35 U.S.C. §112 second paragraph for any of several reasons (vide supra). The Board should reverse this rejection because there is definiteness pursuant to 2173.05(a) because the fact that claim language may not have been precise cannot automatically render the claim indefinite under 35 U.S.C. 112, second paragraph [Seattle Box Co., v. Industrial Crating & Packing, Inc., 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984)].

297. The Board should reverse this rejection because the reasoning of In re Prater [415 F.2d 1393, 162 USPQ 541 (CCPA 1969)] indicates that pending claims must be given the broadest reasonable interpretation consistent with the original specification claims and not cut of cloth of other art. Simply put, the claimed invention must be the focus of the definiteness.

> **"Respondents' claims must be considered as a whole, it being inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis." [DIAMOND v. DIEHR, 450 U.S. 175 (1981), 450 U.S. 175, No. 79-1112, 3/3/81]**

298. The Board should reverse this rejection because the Examiner was asked to identify with specificity and clear explanation what the rejection is based on [Ex parte Ionescu, 222 USPQ 537,539 (Bd. App. 1984)]. The Examiner has not responded to the fact that 35 U.S.C. 112, second paragraph requires the Examiner had to provide reasons why the terms in the claims and/or scope of the invention are unclear

> **"in a positive and constructive way, so that minor problems can be identified and easily corrected, and so that the major effort is expended on more substantive issues."**

299. The Board should reverse this rejection because all definiteness issues were addressed.

300. The Board should reverse this rejection because in summary, there IS definiteness because acceptability of the claim language depends on whether one of ordinary skill-in-the-art would understand what is claimed, and that is confirmed by the light of the specification, the Declarations, the Amicus Briefs, and the peer-reviewed publications [Ex parte Porter, 25 USPQ2d 1144, 1145 (Bd. Pat. App. & Inter. 1992)].

301. The Claims submitted for Amendment with submitted changes for entry were minor and did fully comply with the Examiner's stated requirements, and were written so as to narrow the claims to obviate the outstanding rejection.

The rewritten claims also addressed all issues noted by the Examiner and they did not raise new issues or contain any new matter. Attention of the Board is directed to the fact that the proposed amendments were necessary but could not be presented before the partial incomplete constructive assistance was received from the Examiner [requested pursuant to MPEP 707.07(j) and MPEP 706.03(d)].

ARGUMENT - REJECTION UNDER 35 U.S.C. 102

302. Appellant acknowledges, but respectfully disputes, for the reasons discussed below said rejection. For each rejection under 35 U.S.C. 102, the Appellant hereby does fully and completely specify the errors in the rejection and why the rejected claims are patentable under 35 U.S.C. 102, including any specific limitations in the rejected claims which are not described in the prior art relied upon in the rejection.

303. The appealed claims do not stand or fall together. Claims 1, 10, and 21 are separately patentable and do not stand or fall together because they are materially distinct with respect to 35 USC 102. Claims 1, 10, and 21 are separately patentable because they are not unduly multiplied, have separate limitations, and are required because the invention described by the original specification of the above-entitled application is very complex.

304. The invention at issue in this case, '691, claimed by Claims 1, 5-8, 10-14, 21-30, is generally speaking a method to control the production of the desired products (such as heat) which includes in combination loading the hydrogen using a first applied electric field, and then at a later point in time applying a second electric field to redistribute said isotopic fuel within said material, with means to obstruct the flow of the loaded hydrogen. Each of these features, and those of the original specification of which this is the divisional, is novel. The original specfication describes the subject matter defined by each of the rejected claims, and enables any person skilled in the art to make and use the subject matter defined by each of the rejected claims, and sets forth the best mode contemplated by the inventor of carrying out his invention. The novelty and usefulness of the original specification was demonstrated to be correct at the time of the original filing in Fusion Technology (of the American Nuclear

Society) and elsewhere which demonstrate operability and utility [validation]. These include, but are not limited to, the following: Swartz (1998), Improved Electrolytic Reactor Performance Using π-Notch System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85, Swartz. (1997), Fusion Technology, 31, 63-74.

305. The Office states,

"Claims 1, 5-8, 10-14 and 21-30 are rejected under 35 U.S.C. 102(b) as being anticipated byWestfall (U.S. 5,215,631)."

Applicant respectfully notes that this was discussed in the previous Communication with the Examiner on pages 17 through 25 and pages 31 to 32. Where is the Examiner's response? Instead, the Examiner, inadvertantly or unintentionally appears to just repeat the same question, in a near-decade long effort to deny Applicant both his Constitutional and civil rights.

NOTA BENE: Most importantly, the applicant notes that the application '970 -of which the present invention '691 is a continuation of- was filed 9/17/91 prior to Westfall (June 1st 1993). In addition it precedes the filing date of Westfall (Oct. 11th, 1991).

Nonetheless *in arguendo*, for the sake of argument, the applicant will now discuss Westfall in full detail to demonstrate that even if it was timely, which it is not, and if it were relevant to the present novel invention, which it is not.

306. The Office states that Westfall discloses,

"Note that appellant's claimed "isotopic fuel" reads on the hydrogen generated by WesTfall's aqueous solution and his "material" reads on Westfall's "working electrode."

THE TRUTH - Different Purposes. Westfall makes growing crystals at 4.2 feet per hour

US 5,215,631 discloses a process and an apparatus for growing large crystals by electrodeposition. Westfall, as discussed therein, grows enlarging metal crystals as shown in figures 2a through 2d, therein. Westfall's invention is to produce dendritic crystals and explicitly involves ribbon crystal and crystalline growth systems with growth rates (deposition rates) of 4.2 feet per hour in linear growth rate (column 36 lines 17 through 22). In Westfall, the crystals grow to become freestanding single crystals of tin in its cubic and tetragonal forms. Westfall uses said grown crystals to make photovoltaic cells, as discussed in column 13, lines 55 through 66.

Westfall's crystals, grown at 4.2 feet per hour, do not have the purpose, advanced technology, features, and advantages of the present invention. Unlike Westfall, '691 teaches a method to produce a product which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material. This is clearly shown in the Figures, and discussed, in the original specification of 691.

307. The Office states that Westfall discloses,

"Westfall discloses a process for growing crystals by electrodeposition. He teaches that his invention has use in growing palladium, titanium and other metal crystals for "cold fusion" electrodes (e.g., see column 1, lines 36+, column 2, lines 37+, and column 3, lines 32+). His method uses the electrolytic apparatus shown in Fig. I comprising a bath (4) between a working electrode 8 (where the crystal growth occurs) and a counter electrode (which replenishes the electrolytic solution's concentration of ions of the to-be-deposited material. The bath is used by passing current between the working and counter electrodes (e.g. see column 4, lines 25+). Westfall further discloses that palladium can be deposited from the more common aqueous systems (see column 7, lines 25+). Table I lists metals that can be grown from an aqueous solution, including palladium, and the more common anion and cation components. He teaches that hydrogen is generated in an aqueous system (e.g. see column 9, lines 32+)."

THE TRUTH - Different Inventions - Even The surface of Westfall's Electrode changes in Position

US 5,215,631 discloses a process and an apparatus for growing crystals by electrodeposition. The electrode keeps moving (unlike the present invention) at 4.2 feet per hour (column 36 lines 17 through 22). Westfall --as it claims-- is simply a process and an apparatus for growing crystals in linear growth rate (column 36 lines 17 through 22), useful for freestanding single crystals of tin in its cubic and tetragonal forms. Even the anode used in Westfall is shaped to enhance the rate of growth of the crystal (column 5 lines 43 through 49) using "crucibles ... chosen ... to survive the corrosive nature of the molten salt baths" (column 32 lines 55 through 59). Westfall includes none of the features of the present invention.

By contrast, the present invention is not a process and an apparatus for growing crystals by electrodeposition, but in the preferred embodiment, a method to control the production of heat or nuclear product which includes in combination loading an isotopic fuel into a material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said

material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material and means to extract product using magnetic field inhomogeneity, based differential magnetic susceptibilities. Westfall does not even discuss loading. Thus, the present invention is novel and not anticipated by the cited art, Westfall. Nowhere in Westfall, or in any combination of the Examiner's art, is any aspect of the features of '691.

308. The Office states that Westfall discloses,

"Westfall further discloses the use of orthogonal electric fields as part of the nucleation manipulation techniques for crystal growth control. He states that orthogonal electric fields are generated by the use of "conformal" counter electrodes with configurations such as wire-tubular, sphere-spherical, cube-cubical torus-toroidal, etc. (see column 24, lines 11+). Westfall also discloses conformal electric fields may be used in combination with one or more nucleation manipulation techniques, such as magnetic fields (se column 24, lines 55+). "

THE TRUTH - Different Metals for Different Purposes with Different Loadings

By constrast to what the Examiner claims, THIS patent yields non-uniform distributions. Furthermore, the cited patent, US 5,215,631 discloses enlarging metal crystals as shown in figures 2a through 2d, therein with growth rates (deposition rates) of 4.2 feet per hour in linear growth rate (column 36 lines 17 through 22; said enlarging metal crystals shown in figures 2a through 2d, therein). The anode used in Westfall is shaped to enhance the rate of growth of the crystal (column 5 lines 43 through 49). In contrast, the original specification and claims of the present invention, '691 claims a method to control the production of heat or nuclear product which includes in combination loading an isotopic fuel into a material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material and means to extract product using magnetic field inhomogeneity, based differential magnetic susceptibilities.

The present invention uses hydrogen INSIDE a metal such as palladium for purposeful reasons, which are clearly different from the ions making large crystals quickly OUTSIDE the metal, such as described in Westfall. Attention is directed to the fact that in Westfall, unlike the present invention, there are enlarging metal crystals, ribbon crystalline growth systems, tin in its cubic and tetragonal forms, and crucibles using molten salt baths.

Westfall's invention, a process and an apparatus for growing crystals of tin in its cubic and tetragonal forms controls ions OUTSIDE of the enlarging metal crystals

(figures 2a through 2d, therein). Westfall refers to saturation OUTSIDE of the metal crystal and is an entirely different teaching from the present invention. Westfall does not even discuss loading into the material (underlined in Examiner's quote for emphasis). Furthermore there is no mention of internal flows within any part of Westfall. Thus, it cannot read on the present invention, a method to produce a product which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material.

309. Corroborating this, Westfall admits that the apparatus of Westfall is no more than a means to a process and an apparatus for growing crystals by electrodeposition with rapid metal growth rates at 4.2 feet per hour (column 36 lines 17 through 22). Westfall admits it makes photovoltaic cells (column 13, lines 55 through 66). Westfall also admits that crucibles must be chosen which are able to survive corrosive molten salt baths (column 32 lines 55 through 59).

310. Attention is directed to the fact that the following elements shown in Westfall are not present, or needed, or claimed in the present invention. Said unneeded elements numbered in Westfall as bath (4, column 8, line 5), reference electrode (14), light source (18), stepping motor (22) and its mechanical connection to the cathode (8) are not needed in the present invention, as described in the original specification and claims, thereby proving the present invention has significant novelty and non-obviousness.

311. As the original specification states (page 1, lines 10-12), ...

(t)he method and apparatus uses at least two non-parallel electric-fields to control the loading into the material and redistribution of the isotopic fuel within the material."

The original specification teaches (page 5, lines 14-17), the best mode contemplated by the inventor of carrying out his invention using the first applied electric field intensity (referring to the figures).

"Figure 2 is a crossectional drawing .... (t)his device has two orthogonal applied electric fields. The first (labelled E-field number 1 in the the figure) is that which is applied to charge the palladium with deuterons."

Where in Westfall are 691's two orthogonal applied electric fields, or having the second applied electric field intensity delivered after full charging?

312. The original specification continues (page 5, lines 17-22) with the best mode contemplated by the inventor of carrying out his invention using the second applied electric field intensity.

"The second applied electric field intensity is delivered after full charging has been achieved. In the figure the anode and cathode are labelled as 7 and 1. The electrolyte solution or gel is labelled as 6. The connections for the first electric field are labelled as 81 and 82. The connections for the second electric field are labelled as 85 and 86. The mechanical casing is labelled 20."

Where in Westfall are 691's are there separate connections for the applied electric field intensities?

313. The original specification teaches (page 6, lines 1-5) and elaborates for those skilled in the art to make and use the subject matter defined by each of the rejected claims.

"The cathode in this preferred configuration is divided into parallel slabs. Between these slabs alternate deuteron-impermeable barriers. Application of the second electric field causes the deuterons already loaded in the cathode to redistribute, but the deuteron-impermeable barrier(s) act to enhance the desired reactions."

Where in Westfall are 691's is the cathode divided into parallel slabs and alternate deuteron-impermeable barriers?

314. The original specification teaches (page 7, lines 1-4), the best mode contemplated by the inventor of carrying out his invention

"The result is the piling up of deuterium at the deuteron-impermeable barriers (labeled 55). The heat energy is directed out via the the heat pipes and the thermal bus."

Where in Westfall are 691's is the second electric field is directed through the pairs of barriers and electrode to enhance the desired reactions?

315. The original specification teaches (page 5, lines 23-25) the best mode contemplated by the inventor of carrying out his invention with respect to the impermeable barrier (referring to the figures).

"The deuteron impermeable barrier is comb-shaped in this preferred configuration, and is labelled 55 in figure 13."

Where in Westfall are 691's are there deuteron impermeable barriers which are comb-shaped?

These elements of '691 are not present in Westfall.

Therefore, the material of Applicant's invention, '691, does not read on Westfall's process and an apparatus for growing crystals by electrodeposition, as the Examiner suggests.

The apparatus described in Westfall has none of the properties of the apparatus described in the present invention.

This demonstrates they are different patents entirely with different uses, reasons, and methods.

316. The Office states,

"Note further that claims 8 and 13 are anticipated by Westfall's method that provides for application of magnetic field, in addition to electric fields (e.g. see column 24, lines 59+). As to the specific limitation in claim 8 regarding an "inhomogeneous magnetic filed," any applied magnetic field will have "inhomogeneity" because of inherent imperfections in the material (e.g., non-uniform crystal structure) or the source of the magnetic field (e.g., if an a.c. electrical source produces the magnetic field, any voltage fluctuations, which inherently always occur, will cause inhomogeneity in the magnetic field. Appellant's claim language reads on such.

As to claim 14, note that the Westfall's working electrode can either be a cathode or an anode (see column 4, lines 26 and 27).

Note also that the limitation of claim 10 regarding the electric fields and their sequential application read on Westfall's aqueous electrochemical process. The electric field resulting from application of a voltage between the working electrode and counter electrode, which reads on appellant's "first electric field", primarily causes the movement of ions (including hydrogen ions) from the bath to the working electrode. This process reads on appellant's "loading isotopic fuel to the material." Westfall also discloses that the orthogonal fields, which result from a conformal counter electrode configuration, provide control of nucleation (see column 24, lines 1+). He further discloses that nucleation controls growth of crystals (e.g., see column 5, lines 1+). Conformal electric fields result in near uniform intensities and near uniform ion diffusion distances promoting superior deposition system stability (e.g., see column 24, lines 30+) Therefore, the orthogonal field resulting from a conformal counter electrode configuration and its beneficial effect on crystal formation read, respectively, on appellant's "second electric field" and it's effect of "redistribution of the fuel within the material." Clearly, the first electric field must first effect movement of ions from the electrolytic bath towards the working electrode before the orthogonal electric field can effect control of distribution of these ions to form the desired crystal growth. "

The material of Applicant's invention, '691, does not read on Westfall's process as the Examiner suggests.

When hydrogen appears in Westfall it is not for loading. It is to the air as gas (column 9, line 35 through 43, especially lines 39 referring to "bubbling"). This is different from that used in the present invention which is loaded as taught in '691 in the present invention's original specification and claims, and will be explained in detail below. This "bubbling" of hydrogen in Westfall is different from this application

which involves loading an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material, as discussed in the present invention's original specification and claims.

Furthermore, there is no mention of internal flows in the metal in Westfall. Furthermore, in Westfall all applied fields are synchronous, whereas in '691 they are metachronous (at different points in time).

Furthermore, unlike the present invention, Westfall does not discuss loading. Furthermore there is no mention of internal flows within any part of Westfall. Corroborating this, in the present invention, the hydrogen sought is that within the palladium, which is not even discussed in Westfall.

317. US 5,215,631 discloses a process and an apparatus for growing crystals by electrodeposition which 1) involves ions other than hydrogen, 2) and they are on the OUTSIDE of the metal. Unlike the present invention, Westfall does not discuss loading. Furthermore there is no mention of internal flows within any part of Westfall. By contrast, the original specification and claims of the present invention, '691, claim a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material.

By contrast, in the preferred embodiment of the present invention, this device has two orthogonal applied electric fields with the second applied electric field intensity is delivered after full charging has been achieved. The deuteron impermeable barrier is comb-shaped labelled 55 and the cathode in the preferred configuration is divided into parallel slabs and alternate deuteron-impermeable barriers. Application of the second electric field is directed through the pairs of barriers and electrode to enhance the desired reactions. Where is this in the cited patent?

If the materials and elements used in Westfall, as suggested by the examiner, were to be used in the present invention, they would not function. Furthermore, if the present invention was used as discussed in Westfall, the materials of '691 would not even be functional. Temperatures required for Westfall are such that,"crucibles must be chosen which are able to survive the corrosive nature of the molten salt baths"

(column 32 lines 55 through 59). If the present invention, '691, was used as described in Westfall, it would not even work.

318. The Office states that Westfall discloses,

"hydrogen is formed outside the electrode in Westfall and not inside"

THE TRUTH - Different Locations of Flow

Actually, US 5,215,631 discloses growing enlarging metal crystals at impressive growth rates (deposition rates) of 4.2 feet per hour in linear growth rate (column 36 lines 17 through 22), used to make freestanding single crystals of tin in its cubic and tetragonal forms which Westfall then uses to make photovoltaic cells, as discussed in column 13, lines 55 through 66. Unlike the present invention, the anode used in Westfall is the shaped to enhance the rate of growth of the crystal (column 5 lines 43 through 49).

Saturation in the present invention involves LOADING of the hydrogen INSIDE the metal. This has nothing to do with Westfall. The applicant thanks the Examiner for pointing this out since there is a possible point of confusion and the applicant will correct the claims accordingly with replacement of saturation with "loading" which is not new material since it was mentioned in the original specification and claims.

Furthermore, in Westfall all applied electic field intensities are synchronous in time, whereas in '691 they are applied metachronously (at different points in time).

319. The Office states that Westfall reads on,

"c) it does not have the following features: means to control the distribution, means incIciding barriers impenetrable to flow of isotopic fuel, three separate connections for the applied field intensities; cathode divided into parallel slabs; second electric field directed through pairs of barriers and electrode to enhance the desired reactions; coin-shaped impermeable barriers; "

THE TRUTH -Catastrophic Flow differs from Electrochemical Throwing power

The material of Applicant's invention, '691, does not read on Westfall as the Examiner suggests. Westfall's enlarging metal crystals (figures 2a through 2d, therein) in ribbon crystal and crystalline growth systems have claims and teachings which are not the same as a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material, as discussed in the present invention's original specification and claims.

320. The Office states that ,

"...the orthogonal field resulting from a conformal counter electrode configuration and its beneficial effect on crystal formation read, respectively, on applicant's "second electric fields and it's effect of "redistribution of the fuel within the material."

"Westfall discloses an electrodeposition process using orthogonal electric fields."

THE TRUTH - Different Current Locations, Purposes, Time courses

Westfall does not disclose orthogonal electric fields as taught in the present invention. The material of Applicant's invention, '691, does not read on Westfall's process and apparatus for growing crystals by electrodeposition, as the Examiner suggests. Westfall's product produces dendritic crystals with growth rates (deposition rates) of 4.2 feet per hour (column 36 lines 17 through 22) to make photovoltaic cells (column 13, lines 55 through 66).

Westfall's invention which is a process and an apparatus for growing crystals by electrodeposition is not the same as a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material.

Therefore, the hydrogen which is OUTSIDE the crystal in Westfall, or producing hydrogen in Westfall, is different in purpose and use AS CLAIMED from the present invention. It is nonsense to consider Westfall's crystal growth being product removed through the growing metal crystal as the same as heat produced in the present invention. The applicant thanks the Examiner for pointing this out since there is a possible point of confusion and the applicant will correct the claims accordingly as it was mentioned in the original specification and claims.

Furthermore, in Westfall all applied electic field intensities are synchronous in time, whereas in '691 they are applied metachronously (at different points in time).

═══ ERROR BY EXAMINER REGARDING CONTAMINATION ═══

321. The Office inaccurately states,

"...the limitation in the claims regarding an alternating barrier to the isotopic fuel, palladium is known in the art to contain gold as an impurity. Gold is a hydrogen isotope barrier as the Applicant himself admits (see claims in the parent application). Therefore, when the palladium coating is formed on the working electrode, inherently gold will also be deposited. Operation of the Wesffall's apparatus and process will inherently also produce alternate coatings of material containing the barrier gold."

THE TRUTH - CONTAMINATION QUANTITY IS INSUFFICIENT

With all due respect, this is inaccurate because the contaminants will electrodeposit and because of the divergence principle (no net creation of palladium so therefore the divergence = 0). The Examiner should have read the books which the Applicant suggested previously regarding this because they are well-known to those familiar with the state-of-the-art. The applied electric field is direct to move cations (i.e. Pd^{++}) to the cathode where it plates out. The Examiner is referred to the following on electrochemistry and continuum electrodynamics, sine qua non to those skilled in the art [Uhlig, H.H., "Corrosion and Corrosion Control", Wiley (1971), BOCKRIS, J., K.N. REDDY, "Modern Electrochemistry", Plenum Press (1970), VON HIPPEL, A. "Dielectric Materials and Applications", MIT Press, (1954); VON HIPPEL, A., D.B. KNOLL, W.B. WESTPHAL, "TRANSFER OF PROTONS THROUGH 'Pure' ICE Ih SINGLE CRYSTALS", J. Chem. Phys., 54, 134, (also 145), (1971), and MELCHER, J.R., "Continuum Electromechanics", MIT Press, Cambridge, (1981). Therefore the Examiners statement is incorrect after the application of the only electric field intensity in Pons, and the first electric field intensity in the present application.

═══ ERROR BY EXAMINER REGARDING CONTAMINATION QUANTITY AND LOCATION ═══

322. The Office inaccurately states that nickel is in stainless steel, but as the Examiner twists the cited art, this, too, is inaccurate because the purported contaminant is such a minor inadvertant or essentially unavailable fraction and because of the divergence principle. As the Examiner may have inadvertantly or unintentionally forgot, the applied electric field will move cations (i.e. Ni^{++}) to the cathode where they plates out Therefore, the Examiner's comment is also inaccurate because the quantity is insufficient and is at the wrong location. There is not enough quantity in the putative contaminants which the Examiner postulates will be electrodeposit. Again, reference is made to the books which the Applicant suggested

Therefore the Examiner's statement is incorrect, and probably would not have been made if the Examiner had calculated the entire volume integral of the cation concentration in the solution and metal, and the availability by corrosion, and then considered the substantially larger quantity of atoms required to achieve the teachings of the present application which then occur at a different location as described in the present application and its parent, of which it is a Divisional. If the present invention, '695, was used as described, it would not even work.

323. In summary, the subject matter of Applicant's invention, '691, does not read on the Examiner's cited art which are not the same as a method to control the production of heat or nuclear product which includes in combination loading an isotopic fuel into a material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material and means to extract product using magnetic field inhomogeneity, based differential magnetic susceptibilities.

Claims 1, 10, 11, 21, 22, and 24-30 are rejected under35 U.S.C. 102(b) as being anticipated by Kinsella et al.(U.S. 3,682,806). This was discussed in the previous Communication with the Examiner on pages 26 thorugh 32. Where is the Examiner's response? Instead, the Examiner once again, has inadvertantly or unintentionally just unfaily asked the same question. Notwithstanding the above, as discussed below, the Applicant demonstrates that said rejection is an error.

324. The Office states,

"9.6 Claims 1, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kinsella et al.(U.S. 3,682,806). Kinsella et al. disclose a process for electroplating metallic articles with carboxylic film-forming materials utilizing lithium hydroxide as solubilizer (see Fig. I and column 8, 2nd paragraph). Fig. I shows the anode (4), which is the material to be coated, a stainless steel cathode (6).

An alternative embodiment can have an auxiliary platinum anode (7) and an auxiliary stainless steel cathode (8). The electrodeposition current flows from the anode (4) to the stainless steel cathode (6).

An auxiliary direct current (referred to as "regeneration current") is applied between the auxiliary electrodes, the direction of the current being orthogonal to the direction of the electrodeposition current (see column 9, lines 65+). Note that appellant's "isotopic fuel" in the claim language reads on the lithium anions that

form on the anode, "material" reads on "anode", and "orthogonal electric fields" reads on the orthogonal fields produced by the electrodeposition current and the regeneration current. "

Kinsella --as it claims-- is simply a process for electroplating metallic articles with carboxylic film-forming materials in a process utilizing lithium hydroxide as solubilizer (see Fig. 1 and column 8, 2nd paragraph). Kinsella demonstrates the most rudimentary of an electroplating process and it does not have the purpose, advanced technology, features, and advantages of the present invention. Kinsella, uses a stainless steel cathode, and only a one stage process. Kinsella uses no loading, or has no features of the present application. Corroborating this, from Kinsella, the Examiner quotes that 'Fig. 1 shows the anode (4), which is the material to be coated, a stainless steel cathode (6)'. Furthermore, as additional further proof in Kinsella the text explicitly states, as the Examiner quotes '*An alternative embodiment can have an auxiliary platinum anode (7) and an auxiliary stainless steel cathode (8)*'.

325. Kinsella leads away from the present invention as it uses a cationic membrane to divide the cathodic compartment (number 1 in Kinsella, column 9 line 65), a regenerated ion exchange resin (column 10 line 14), a auxiliary platinum anode ("7", column 10 line 15), a selective electrodialysis membrane to contain ion exchange resin ("9" and "12", column 10 lines 19-23), and a solubilized feed makeup material introduced to the anode ("11", column 10 line 11), which are not needed in the present invention, as described in the original specification and claims.

326. In addition, Kinsella, (page 2, column 2, lines 7-15) teaches the loading current is into the volume of the cathode (in contrast to the cited patent).

Thus, the present invention, unlike Kinsella which uses methods well known to those who work in the art, is not an electroplating process of carboxylic film-forming materials, but in the preferred embodiment is a two-stage process involving loading of hydrogen into a metal electrode such as palladium, including a first stage of electrode loading, followed by, a second stage of sudden rapid ('catastrophic') flow of the loaded hydrogen within the metal. The present invention uses a two-stage process, loading of hydrogen, a metal electrode such as palladium, a first stage of electrode loading, and a second stage of sudden rapid ('catastrophic') flow of the loaded hydrogen within the metal, for purposeful reasons, which are clearly different from the carboxylic film-forming processes described in Kinsella.

327. Corroborating this, attention is directed to the fact that the following elements shown in Kinsella are not present, or needed, or claimed in the present invention. Said unneeded elements numbered in Kinsella as 1 (cationic membrane to divide the cathodic compartment (column 9 line 65), 7 (a auxiliary platinum anode (column 10 line 15),9 (a selective electrodialysis membrane to contain ion exchange resin (column 10 lines 19-23), and 11 (a solubilized feed makeup material introduced to the anode (column 10 line 11) are not needed in the present invention, as the described in the original specification and claims, thereby proving the present invention has significant novelty and non-obviousness.

328. If the materials and elements used in Kinsella, here the cationic membrane to divide the cathodic compartment (number 1 in Kinsella, column 9 line 65), a regenerated ion exchange resin (column 10 line 14), a auxiliary platinum anode ("7", column 10 line 15), a selective electrodialysis membrane to contain ion exchange resin ("9" and "12", column 10 lines 19-23), and a solubilized feed makeup material introduced to the anode ("11", column 10 line 11), as suggested by the examiner, were to be used in the present invention, they would not function. Similarly, if the present invention, '691, was used as described in Kinsella, it would not be functional.

329. The present invention is a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material. In the preferred embodiment, this device has two orthogonal applied electric fields with the second applied electric field intensity is delivered after full charging has been achieved. The deuteron impermeable barrier is comb-shaped. Where is this in the cited patent?

The materials described in Kinsella do not have the properties of the materials described in the present invention.

The methods described in Kinsella are not the methods described in the present invention.

'691 is novel and not anticipated by Kinsella. Nowhere in Kinsella is any aspect of the features of '691.

330. The Office states,

"Stainless steel contains nickel, and nickel or its alloys is disclosed by the Applicant as acceptable material (see claim 6).

b) Nickel is known in the art to absorb deuterium.-Applicant himself admits to this well-known, scientific fact by his claims."

THE TRUTH - The Examiner's Current Analogies are Not Accurate

It is improper to compare Kinsella's 'electrodeposition current' to the present invention's well taught loading current.

In Kinsella, the loading current is onto the surface of the cathode in contrast to the cited patent which loads the volume for different purpose.

Kinsella electroplates metallic articles with carboxylic films (column 8, 2nd paragraph).

331. Unlike the present invention where there is a specialized palladium (or other hydrogen loading) cathode, in Kinsella, there is only a stainless steel cathode. Corroborating this, from Kinsella, the Examiner quotes that 'Fig. 1 shows the anode (4), which is the material to be coated, a stainless steel cathode (6)'. Furthermore, as additional further proof in Kinsella the text explicitly states, as the Examiner quotes 'An alternative embodiment can have an auxiliary platinum anode (7) and an auxiliary stainless steel cathode (8)'.

332. Further corroborating this, attention is directed to the fact that Kinsella leads away from the present invention as it uses a cationic membrane to divide the cathodic compartment (number 1 in Kinsella, column 9 line 65), a regenerated ion exchange resin (column 10 line 14), a auxiliary platinum anode ("7", column 10 line 15), a selective electrodialysis membrane to contain ion exchange resin ("9" and "12", column 10 lines 19-23), and a solubilized feed makeup material introduced to the anode ("11", column 10 line 11) which are not needed in the present invention, as the described in the original specification and claims. This proves that the present invention has significant novelty and non-obviousness.

333. Attention is directed to the fact that in Kinsella, unlike the present invention where there is a specialized palladium (or other hydrogen loading) cathode, in Kinsella, there is only a stainless steel cathode, only a one stage process, no loading, and no features of the present application.

Even the currents are handled differently. Kinsella, (page 2, column 2, lines 7-15) teaches the loading current is into the volume of the cathode in contrast to the cited paten (infra).

334. The Office states that Kinsella discloses,

"d) ."Full charging" is not a limitation recited in the claims. All of the claims recite the term "loading" not "full charging." See item c) above

e) Claims do not recite how the charging current is to be delivered. See item c) above.

As to the issue of alternating barriers and thereby clauses, see section ~ above. The other items raised by the Applicant regarding Kinselia are the same as those discussed in section ~ above."

THE TRUTH -REGENERATION CURRENT OUTSIDE A METAL HAS NOTHING TO DO WITH CATASTROPHIC FLOW CURRENT WITHIN A METAL

'691 teaches and claims a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material.

Kinsella's process is for the purpose of electroplating metallic articles with carboxylic films.

Attention is directed to the fact that Kinsella uses an auxiliary platinum anode ("7", column 10 line 15) which is not needed in the present invention, as the described in the original specification and claims. This proves that the present invention has significant novelty and non-obviousness.

Furthermore, in Kinsella all applied electic field intensities are synchronous in time, whereas in '691 they are applied metachronously (at different points in time).

335. The Office states,

"Note that applicant's "isotopic fuel" in the claim language reads on the lithium anions that form on the anode, "material" reads on "anode", and "orthogonal electric fielded reads on the orthogonal fields produced by the electrodeposition current and the regeneration current

THE TRUTH - ELECTRODEPOSITION CURRENT IS NOT THE LOADING CURRENT

The material of Applicant's invention, '691, does not read on Kinsella's an electroplating process carboxylic film-forming materials, as the Examiner suggests.

Kinsella's invention which is an electroplating process carboxylic film-forming materials which cannot be the same as a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the

distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material.

Kinsella --as it claims-- processes carboxylic film-forming materials with lithium hydroxide as solubilizer (see Fig. 1 and column 8, 2nd paragraph). This cannot read on the hydrogen of the present patent because the applicant uses hydrogen as the loaded material.

In addition, the 'anode' of Kinsella cannot be the 'material' because in the present patent, it is cathodically controlled and used for a different purpose.

336. The 'electrodeposition current' cannot read on 'loading of isotopic fuel into material' because in Kinsella, unlike the present invention where there is a specialized palladium (or other hydrogen loading) cathode, there is only a stainless steel cathode (6). Furthermore, Kinsella uses a cationic membrane to divide the cathodic compartment (number 1 in Kinsella, column 9 line 65), a regenerated ion exchange resin (column 10 line 14), a auxiliary platinum anode ("7", column 10 line 15), a selective electrodialysis membrane to contain ion exchange resin ("9" and "12", column 10 lines 19-23), and a solubilized feed makeup material introduced to the anode ("11", column 10 line 11) which are not needed in the present invention, or used therein for the purposes which Kinsella states. This proves that the present invention has significant novelty and non-obviousness.

As the original specification states (page 1, lines 10-12), ...

(t)he method and apparatus uses at least two non-parallel electric-fields to control the loading into the material and redistribution of the isotopic fuel within the material."

337. The original specification teaches (page 5, lines 14-17), the best mode contemplated by the inventor of carrying out his invention using the first applied electric field intensity (referring to the figures).

"Figure 2 is a crossectional drawing .... (t)his device has two orthogonal applied electric fields. The first (labelled E-field number 1 in the the figure) is that which is applied to charge the palladium with deuterons."

Where in Kinsella are 691's two orthogonal applied electric fields, or having the second applied electric field intensity delivered after full charging?

338. The original specification continues (page 5, lines 17-22) with the best mode contemplated by the inventor of carrying out his invention using the second applied electric field intensity.

"The second applied electric field intensity is delivered after full charging has been achieved. In the figure the anode and cathode are labelled as 7 and 1. The electrolyte solution or gel is labelled as 6. The connections for the

first electric field are labelled as 81 and 82. The connections for the second electric field are labelled as 85 and 86. The mechanical casing is labelled 20."

Where in Kinsella are 691's are there separate connections for the applied electric field intensities?

339. The original specification teaches (page 6, lines 1-5) and elaborates for those skilled in the art to make and use the subject matter defined by each of the rejected claims.

"The cathode in this preferred configuration is divided into parallel slabs. Between these slabs alternate deuteron-impermeable barriers. Application of the second electric field causes the deuterons already loaded in the cathode to redistribute, but the deuteron-impermeable barrier(s) act to enhance the desired reactions."

Where in Kinsella are 691's is the cathode divided into parallel slabs and alternate deuteron-impermeable barriers?

340. The original specification teaches (page 5, lines 23-25) the best mode contemplated by the inventor of carrying out his invention with respect to the impermeable barrier (referring to the figures).

"The deuteron impermeable barrier is comb-shaped in this preferred configuration, and is labelled 55 in figure 13."

Where in Kinsella are 691's are there deuteron impermeable barriers which are comb-shaped?

These, and other elements of '691, are not present in Kinsella.

341. Kinsella's invention which is an electroplating process carboxylic film-forming materials is not the same as a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material.

LAW

342. Appellant respectfully notes that this was discussed in the previous Communication but has not been addressed with specificity and precision. These patents are very different far beyond the fact that they do not involve loading, beyond the fact that they use other components not in the present invention, and have a different purpose and method, and they do not disclose a sequential second applied electric field intensity after full charring has been achieved, and that Kinsella delivers the charging current into the bath instead of the cathode. It is far beyond that. The material of Applicant's invention, '691 does not read on the Examiner's cited art. Furthermore, it is improper to compare Pons to the present invention for several reaso ns which the Applicant already discussed with the Examiner, but to which the Examiner has NOT yet completely and substantively responded. In particular, as to Section 102 rejections, it is stated in M.P.E.P. 706.2 that:

> **'The distinction between rejections based on 35 USC 102 and those based on 35 USC 103 should be kept in mind. Under the former, the claim is anticipated (emphasis added) by the reference.**

343. In this same connection, The Court of Customs and Patent Appeals said in In re Arkely, Eardley and Long, 172 U.S.P.Q. 524, 526 (CCPA, 1972):

> **'It is to be noted that rejections under 35 USC 103 are proper where the subject matter claimed 'is not identically disclosed or described'(emphasis by the Court) 'in the prior art,' indicating that rejections under 35 USC 102 are proper only when the claimed subject matter is identically disclosed or described in 'the prior art'.**

344. Therefore, given the above, the independent claims, and hence all claims, distinguish over the reference cited under Sec. 102. Thus, the present invention, a method to control the production of heat or nuclear product which includes in combination loading an isotopic fuel into a material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel, is novel, is not obvious, and does distinguish from all previous art.

Given the above, the Examiner should be fair, should answer the Declarations, should thereby answer the previous Orders of the Board, and should answer with specificity all explicitly discussed issues herein and in the previously submitted but substantially ignored response, or after reconsideration with respect to novelty (Sec. 102), allowance is respectfully requested by the Applicant.

Given the above, reconsideration with respect to novelty (Sec. 102) is respectfully requested by the Appellant.

ARGUMENTS - Claim Rejections - 35 USC § 103

345. The Examiner now states:

"9.8. Claims 8 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Cedzynska et al. in view of Westfall, as applied to claims 1-7, 10-12, 14 and 21-30 above, and further in view of anyone of Edwards, Sadoway (WO 91/06959) or Van Noorden (NL 8909-962-A) or Dufour (WO 91/01 036). The combination of Cedzynska et al. and Westfall discloses the appellant's claims except for the use of magnetic fields in fusion. "

NOTA BENE: First, this is different from the rejection at Final. The pro se Appellant protests the Examiners attempts to misdescribe, again, the above-entitled invention. The averments above, and below, are incorporated herein.

346. Second, the appealed claims do not stand or fall together. Claims 1, 10, and 21 are separately patentable and do not stand or fall together because they are materially distinct with respect to 35 USC 103. Claims 1, 10, and 21 are separately patentable because they are not unduly multiplied, have separate limitations, and are required because the invention described by the original specification of the above-entitled application is very complex.

347. Third, Appellant respectfully notes that several substantive Arguments discussed have been ignored. As but one example, the Examiner states, "*Applicant's traverse of Edwards, Sadoway, Van Noorden and Dufour are not convincing for reasons similar to those described in sections 8 and 9 above.*", but never for each gives substantive, precise and accurate answers. The Examiner simply ignores the Applicant's explanations and submitted Declarations. Notwithstanding the above, this shall be re-addressed.

348. For each rejection under 35 U.S.C. 103, the Appellant hereby does fully and completely specify the errors in the rejection and the specific limitations in the rejected claims which are not described in the prior art relied on in the rejection. Appellant also explains how such limitations render the claimed subject matter unobvious over the prior art.

BACKGROUND: Westfall (US 5,215,631)

349. The Office states,

"2A The combination of Cedzynska et al. and Wesffall disclose the applicant's claims except for the use of magnetic fields in fusion."

THE TRUTH - Different Purposes. Westfall makes growing crystals at 4.2 feet per hour

The applicant notes that the application '970 -of which the present invention '691 is a continuation of- was filed 9/17/91 prior to Westfall (June 1st 1993). In addition it precedes the filing date of Westfall (Oct. 11th, 1991). Nonetheless *in arguendo*, for the sake of argument, the applicant will now discuss Westfall in full detail to demonstrate that even if it was timely, which it is not, and if it were relevant to the present novel invention, which it is not.

350. US 5,215,631 discloses a process and an apparatus for growing large crystals by electrodeposition. Westfall, as discussed therein, grows enlarging metal crystals as shown in figures 2a through 2d, therein. Westfall's invention is to produce dendritic crystals and explicitly involves ribbon crystal and crystalline growth systems with growth rates (deposition rates) of 4.2 feet per hour in linear growth rate (column 36 lines 17 through 22). In Westfall, the crystals grow to become freestanding single crystals of tin in its cubic and tetragonal forms. Westfall uses said grown crystals to make photovoltaic cells, as discussed in column 13, lines 55 through 66.

351. Westfall's crystals, grown at 4.2 feet per hour, do not have the purpose, advanced technology, features, and advantages of the present invention. Unlike Westfall, '691 teaches a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material. This is clearly shown in the Figure 2, and discussed, in the original specification of 691.

Furthermore, in Westfall all applied electric field intensities are synchronous in time, whereas in '691 they are applied metachronously (at different points in time).

This indicates that the Office is disingenuous toward the *pro se* Appellant.

BACKGROUND: Cedzynska et al. (WO 93/01601)

352. The Office states,

"9.7 Claims 1, 5-7, 10-12, 14 and 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Cedzynska et al. (WO 93/01 601) or Edwards (WO 90/15416) in view of Westfall. Either one of Cedzynska et al. or Edwards et a!. disclose the appellant's claims except for the orthogonal electric fields.Cedzynska et al. (WO 93/01601) is a rudimentary Fleischmann-pons system which has the modification of "alternately charging and discharging electrodes".

Cedzynska et al. (WO 93/01601) has a filing day of July 8, 1992. The applicant notes that the application '970 -of which the present invention '691 is a continuation of- was filed 9/17/91. Nonetheless *in arguendo*, for the sake of argument, the applicant will now discuss Cedzynska in full detail to demonstrate that even if it was timely, which it is not, and if it were relevant to the present novel invention, which it is not.

In fact, attention is directed to the fact that Cedzynska leads away from the present invention as it uses a rudimentary Fleischmann-Pons system and "alternately charging and discharging electrodes". This proves that the present invention has significant novelty and non-obviousness. Cedzynska et al. does not have any of the features of the present invention.

BACKGROUND: Edwards (WO 90/15416)

353. The Office states,

"Edwards discloses a method for production of thermal energy comprising passing an electric current through electrodes immersed in a liquid electrolyte containing a higher isotope of a low atomic weight atom and applying a magnetic influence to the electrolyte or one or each electrode. The electrolyte may contain lithium and the electrode can be palladium or titanium (see Figs. I and 2, and claims). As discussed in section 9.5 above, Westfall discloses an electrodeposition process using orthogonal electric fields"

In fact, Edwards (WO 90/15416) is a simple system with a rudimentary magnetic field "to distort electrically charged species forming during the electrolysis process at the anode or cathode to control the rate of fusion of charge atoms" (page2, lines 15 through 18). The orientation is not given. Electrolysis is taught. In fact, attention is directed to the fact that Edwards leads away from the present invention as it uses a simple Fleischmann-Pons system and a rudimentary magnetic field "to distort electrically charged species forming during the electrolysis process at the anode or cathode to control the rate of fusion of charge atoms" (page2, lines 15 through 18). The orientation is not given. Electrolysis is taught. Edwards does not have any of the features of the present invention.

BACKGROUND: Sadoway (WO 91/06959)

354. Sadoway (WO 91/06959) is a simple Fleischmann-Pons system. According to Sadoway the applied magnetic field comes from an electromagnetic or a permanent magnet which is used to "enhance fusion initiation" [Page 6, line 13]. Sadoway (WO 91/06959)has an international filing day of October 25th 1990 and a priority day of October 25, 1989. In fact, attention is directed to the fact that Sadoway leads away from the present invention as it uses a simple Fleischmann-Pons system and a magnetic field to "enhance fusion initiation" [Page 6, line 13]. With all the respect, Swartz (SN 07/371,937, filed June 27, 1989, now SN 09/750,480) was the first to use magnetic fields to improve fusion and enhance the fusion rates In the present invention, 691, there is used an applied magnetic field which is spatially inhomogeneous and is used to extract products based on differential magnetic susceptibilities. This is a very different from the use of the magnetic field in Sadoway or Swartz (SN 07/371,937, now SN 09/750,480). Sadoway does not have any of the features of the present invention.

BACKGROUND: Van Noorden (NL 8909-962-A)

355. Van Noorden (NL 8909-962-A) is invention for a simple Pons and Fleischmann system used to generate neutrons. Van Noorden uses a very homogeneous magnetic field through means of "an electric coil in which the electrolysis cell is mounted". Van Noorden (NL 8909-962-A) is dated 12/1/89. In fact, attention is directed to the fact that Van Noorden leads away from the present invention as it uses Va simple Pons and Fleischmann system, generates neutrons, and has a very homogeneous magnetic field through means of "an electric coil in which the electrolysis cell is mounted". Simple electrodynamics reveals that the magnetic field intensity is nearly constant therein. There is no planned applied spatial inhomogenity. Furthermore, Van Noorden (NL 8909-962-A) is dated 12/1/89. With all the respect, Swartz (SN 07/371,937, filed June 27, 1989, now SN 09/750,480) was the first to use magnetic fields to improve fusion and enhance the fusion rates (July 1989). In the present invention, 691, there is used an applied magnetic field which is spatially inhomogeneous and is used to extract products based on differential magnetic susceptibilities. This is a very different from the use of the magnetic field in Sadoway or Swartz (SN 07/371,937, now SN 09/750,480). This proves that the present invention has significant novelty and non-obviousness.

Van Noorden (NL 8909-962-A) uses a simple Pons and Fleischmann system, a neutron generating subsystem, and a very homogeneous magnetic field. It is constant therein. There is no extraction. There is no planned applied inhomogenity. Van Noorden does not have any of the features of the present invention.

BACKGROUND: Dufour (WO 91/01036)

356. Dufour (WO 91/01036) is a simple Fleischmann-Pons apparatus, and has a filing day of July 6, 1990. In fact, attention is directed to the fact that Dufour leads away from the present invention as it uses said imple Fleischmann-Pons apparatus with a voltage source with a "pulse operating range of 10 hertz to 1 MHz" (page 10), which is not needed in the present invention, as the described in the original specification and claims. This proves that the present invention has significant novelty and non-obviousness. Dufour does not have any of the features of the present invention.

357. The Office states,

"Cedzynska et al. disclose a method for electrolytically loading isotopic hydrogen into a palladium or palladium alloy electrode by alternately charging and discharging the electrode in a plurality of cycles, each cycle including charging of the electrode with isotopic hydrogen approximately to a saturation level and then discharging the electrode to a predetermined retention level see Abstract, page 9 and Fig. 1)."

THE TRUTH - The Inventions Differ

This present invention is novel and not anticipated by the cited art, Westfall, Cedzynska and Edwards. Nowhere in Westfall, Cedzynska and Edwards, or in any combination of the Examiner's art, is any aspect of the features of '691.

The present invention, "691 involves the solid state and not plasma physics.

Even the applied magnetic field spatial homogeneity and the way the applied magnetic field is used are different.

Furthermore, in Westfall applied electic field intensities are synchronous in time, whereas in '691 they are applied metachronously (at different points in time).

Furthermore, in the present invention, additional techniques are used and features exist, unlike Cedzynska and Edwards.

Cedzynska and Edwards include none of the features of the present invention.

Edwards discloses a simple Fleischmann-Pons system with a rudimentary magnetic field "to distort electrically charged species forming during the electrolysis process at the anode or cathode to control the rate of fusion of charge atoms" (page 2, lines 15 through 18). The orientation is not given. Electrolysis is taught.

Cedzynska et al. (WO 93/01601) is a rudimentary Fleischmann-pons system which has the modification of "alternately charging and discharging electrodes".

358. Attention is directed to the fact that the following elements shown in Edwards are not present, or needed, or claimed in the present invention. Edwards uses a simple Fleischmann-Pons cell, and electrolysis is taught. The magnetic field is used "to distort electrically charged species forming during the electrolysis process at the

anode or cathode to control the rate of fusion of charge atoms" (page2, lines 15 through 18). The orientation is not given. Said unneeded elements numbered in Edwards are not needed in the present invention, as the described in the original specification and claims, thereby proving the present invention has significant novelty and non-obviousness. Furthermore, Swartz (SN 07/371,937, filed June 27, 1989, now SN 09/750,480) was the first to use magnetic fields to improve fusion and enhance the fusion rates In the present invention, 691, there is used an applied magnetic field which is spatially inhomogeneous and is used to extract products based on differential magnetic susceptibilities.

359. If the present invention, '691, was used as described in Cedzynska, it would not even work. If the present invention, '691, was used as described in Edwards, it would not even work. If the materials and elements used in Edwards, here the simple Fleischmann-Pons cell, electrolysis sought, is taught, etc., as suggested by the examiner, were to be used in the present invention, they would not function.

This present invention has which has nothing to do with Cedzynska's Fleischmann-pons cell and alternately charging and discharging electrodes".

This present invention has which has nothing to do with Edwards's simple Fleischmann-Pons system and rudimentary magnetic field "to distort electrically charged species forming during the electrolysis process at the anode or cathode ..." (page2, lines 15 through 18), which the Examiner suggests.

360. The Office states that,

"Anyone of the cited secondary references cites the application of a magnetic field as part of a claimed electrolysis-nuclear fusion process. See for example page 2 of Westfall, abstract and claims of Sadoway, abstract of Van Noorden, and page 8 of Dufour. One having ordinary skill in the art would have recognized the claimed advantage of applying a magnetic field to enhance a purported nuclear fusion process.

As to the limitations regarding creating a gradient in the intensity of magnetic field and having an inhomogeneous magnetic field, any magnetic filed applied across any material will inherently produce a gradient in the intensity of said field within the material. As to the inhomogeneity of said field, as stated in section 9, any applied magnetic field will have "inhomogeneity" because of inherent imperfections in the material (e.g., non-uniform crystal structure) or the source of the magnetic field (e.g., if an a.c. electrical source produces the magnetic field, any voltage fluctuations, which inherently always occur, will cause inhomogeneity in the magnetic field. Appellant's claim language reads on such. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Cedzynska et al. - Westfall combination, by the teaching of anyone of Edwards, Sadoway, Van Noorden or Dufour to have the

magnetic field, in addition to the orthogonal electric fields, in order to gain the advantages thereof, as this is more than the application of well-known techniques within the nuclear art."

THE TRUTH - DIFFERENT TYPES OF MAGNETIC FORCES USED

361. This was discussed in the previous Communication with the Examiner including on pages 40-42, and 73-74. Where is the Examiner's response? Instead, the Examiner just asks the same question without responding. Westfall does not produce charge particles but uses ions until they deposit (in neutral state) onto the surface of his electrode. In the present invention the material loads into the material and is used thereafter therein. However, for the sake of argument, in arguendo, even supposing that Westfall did, neither Cedzynska or Woolsey are even remotely like, or have the same methods of, or configuration of, or have the same purpose of, the present invention. Most importantly, the present invention separate a product but attention is directed to the fact that Cedzynska and Edwards and the other cited art use an entirely different and distinguishable principle.

362. Edwards demonstrate the most rudimentary of use of a rudimentary magnetic field "to distort electrically charged species forming during the electrolysis process at the anode or cathode to control the rate of fusion of charge atoms" (page2, lines 15 through 18). Swartz (SN 07/371,937, filed June 27, 1989, now SN 09/750,480) used magnetic fields to improve fusion rates In the present invention, '691, there is used an applied magnetic field which is spatially inhomogeneous and is used to extract products based on differential magnetic susceptibilities. This is a very different from the use of the magnetic field in Sadoway or Swartz (SN 07/371,937, now SN 09/750,480).

363. The most developed cited art use of magnetic fields are in Salisbury and Hirsch. They use an entirely different and distinguishable principle from the above-entitled application which involves the use of a magnetic field intensity differently from the cited art (which use a magnetic field intensity in a magnetohydrodynamic system, as is well-known, supra). By contrast, '691 teaches an extraction proceedure using a spatially inhomogeneous magnetic field intensity which has forces which goes as $(\mu H) *(\mu H)$, and not $(v \times \mu H)$ as taught in Salisbury, Hirsch and the other cited art.

PUMPING ACTION BY A SPATIALLY INHOMOGENOUS MAGNETIC FIELD

364. As specified in the original disclosure: The pumping action upon products [other than heat] is from the action of an applied force exerted upon said product (in this case an isotope of hydrogen: tritium). The generation, and calculation, of the force induced by an applied magnetic field intensity upon the desired isotope which is generated within the CAM reactor, is derived as follows.

> **"An inhomogenous magnetic field intensity is applied by coil labelled 300 to one portion of the cathode (1). Said magnetic field is driven by the power supply (labelled 301) in the figure. The spatially inhomogenous magnetic field could also be created by a superconductor."**
>
> [07/760,970; the present application in Continuation; Underline added for emphasis]

Ampere's Law is used to calculate the line integral of the magnetic field intensity around the applied electric current. That magnetic field intensity exists mainly in the gap between the high permeability rod (around which the coil has been wound) and includes the volumes encompassing the desired isotope [cf. Figure 18 of the original specification].

> **"The differential magnetic susceptibility between isotopic fuel and the nuclear fusion product is used to magnetically pump the product to and through the barrier labelled 350. At that location there is a buildup of the isotope with the larger magnetic susceptibility due to said differential magnetic susceptibility."**
>
> [07/760,970; the present application in Continuation]

The magnetic field intensity can be derived by inspection in the gap region based upon Gauss' Law, which implies that the divergence of the magnetic flux density is zero. Therefore, the use of a volume with one surface abutting the volume containing the desired isotope and the other surface abutting the end of said rod, results in a ratio between the two magnetic fields.

365. The magnetic field as taught in the above-entitled application is spatially inhomogeneous. The original specification and claims of the present invention also taught and claimed a separation system to extract an precise product - another feature of great utility.

A magnetic field inhomogeneity, based upon the differential magnetic susceptibilities [cf. Swartz and Straus Declarations; A10-A21], creates forces which make this a

> **"non-linear device in the sense that the containment field distribution is spatially non-uniform. ... the ... invention is therefore a chemical collection device."**
>
> [Straus Declaration 1994]

366. The magnetic force, resulting from the applied magnetic field, is the spatial derivative of the magnetic coenergy with respect to distance.

> **"The magnetic force resulting from the applied magnetic field is the derivative of the magnetic coenergy with respect to distance in the axial direction, and is proportional to the square of the current, the square of the number of turns in the coil (300), and said differential magnetic susceptibility. The products are removed at the product barrier (labelled 350). If said isotopic product is of lower magnetic susceptibility, then the coil is moved toward the portion of the cathode near to the solution (6)."**
>
> [07/760,970; the present application in Continuation]

367. As an alternative means of calculating the applied magnetic force upon the desired isotope is to use the Maxwell Stress Tensor. The Maxwell Stress Tensor is based upon the orthogonal, and parallel, components of the magnetic field intensity over the surface of the desired isotope. The stress tensor is quite complex. The calculated force is based upon the spatial divergence of the stress tensor. Both methods of deriving the magnetic force are identical

368. These solutions are extremely complex but an introduction to this physics in a far simpler system [as regards ferrofluids and not the more complicated invention and products of the above-entitled application] is available in "*Electromechanical Dynamics*", Part III, Elastic and Fluid Media, H. Woodson, J. Melcher, J. Wiley & Sons, Inc., NY (1968), pages 772 to 777 [cf. figures 12.2.21 and 12.2.24].

The important result, as stated in the original specification, is that energy of the entire system decreases by the movement of the higher susceptibility isotopes towards, and into, the region containing the greatest magnetic field intensity.

369. In summary, Westfall and Cedzynska and Edwards are different and distinguishable from applicant's claims and have none of the features of the present invention. The present invention extracts differently than Cedzynska or Edwards (supra) and are different and distinguishable from applicant's claims and have none of the features of the present invention. Corroborating this, attention is now directed to the fact that in when the present invention separates product by an inhomogeneous applied magnetic field intensity. Cedzynska and Edwards do not have the advanced technology, features, and advantages of the present invention.

370. This present invention is a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material. In the preferred embodiment, this device has two orthogonal applied electric fields with the second applied electric field intensity is delivered after full charging has been achieved. The deuteron impermeable barrier is comb-shaped labelled 55 and the cathode in the preferred configuration is divided into parallel slabs and alternate deuteron-impermeable barriers. Application of the second electric field is directed through the pairs of barriers and electrode to enhance the desired reactions. This is novel and not anticipated by the cited art. Nowhere in Edwards, Cedzynska, Westfall, or in any combination of the Examiner's cited art, is any aspect of the features of '691. Thus, the material of Applicant's invention, '691, does not read on Westfall with Cedzynska or Edwards, as the Examiner suggests, and therefore, the present application is a novel and nonobvious.

371. The Office states,

"Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the Cedzynska et al. - Wesffall combination, by the teaching of anyone of Edwards, Sadoway, Van Noorden or Dufour to have a magnetic field, in addition to the orthogonal electric fields, in order to gain the advantages thereof, as this is no more than the application of well-known techniques in the nuclear art."

THE TRUTH - EXTRACTION GOES AS H*H; DIFFERING FROM CITED ART

This present invention is novel and not anticipated by the cited art, Westfall, Edwards, Sadoway, Van Noorden, or Dufour. Nowhere in Westfall, Edwards, Sadoway, Van Noorden, or Dufour or in any combination of the Examiner's art, is any aspect of the features of '691.

Edwards, Sadoway, Van Noorden, or Dufour include none of the features of the present invention. Edwards, Sadoway, Van Noorden, or Dufour demonstrate the most rudimentary of use of a magnetic field, which is entirely different and distinguishable principle from the above-entitled application.

By contrast, the present invention, "691 involves the solid state and not plasma physics.

Furthermore, in the present invention, additional techniques are used and features exist, unlike Edwards, Sadoway, Van Noorden, or Dufour.

Even the way the magnetic fields used are different. '691 teaches an extraction proceedure using an inhomogeneous magnetic field intensity which has forces which goes as (μ H) *(μ H), and not (v x μ H).

372. Edwards (WO 90/15416) is a simple Fleischmann-Pons system with a rudimentary magnetic field "*to distort electrically charged species forming during the electrolysis process at the anode or cathode to control the rate of fusion of charge atoms*" (page 2, lines 15 through 18).

Sadoway (WO 91/06959) is a simple Fleischmann-Pons system with an applied magnetic field to "*enhance fusion initiation*" [Page 6, line 13].

Van Noorden (NL 8909-962-A) is invention for a simple Pons and Fleischmann system used to generate neutrons. Van Noorden uses a very homogeneous magnetic field through means of "*an electric coil in which the electrolysis cell is mounted*". It is constant therein. There is no extraction. There is no planned applied inhomogenity.

Dufour (WO 91/01036) is a simple Fleischmann-Pons apparatus, with a voltage source with a "pulse operating range of 10 hertz to 1 MHz" (page 10).

373. Attention is directed to the fact that the following elements shown in Edwards (WO 90/15416), magnetic field "*to distort electrically charged species forming during the electrolysis process at the anode or cathode to control the rate of fusion of charge atoms*" (page2, lines 15 through 18), electrolysis sought, are not needed in the present invention, thereby proving the present invention has significant novelty and non-obviousness.

Attention is directed to the fact that the following elements shown in Van Noorden (NL 8909-962-A) generator of neutrons, very homogeneous magnetic field, are not needed in the present invention, thereby proving the present invention has significant novelty and non-obviousness.

Attention is directed to the fact that the following elements shown in Dufour (WO 91/01036), a voltage source with a "pulse operating range of 10 hertz to 1 MHz" (page 10), are not needed in the present invention, thereby proving the present invention has significant novelty and non-obviousness.

374. If the present invention, '691, was used as described in Edwards, it would not even work. If the materials and elements used in Edwards, here the simple Fleischmann-Pons system with a rudimentary magnetic field "to distort electrically charged species forming during the electrolysis process at the anode or cathode to control the rate of fusion of charge atoms" (page 2, lines 15 through 18), etc., as suggested by the examiner, were to be used in the present invention, they would not function. This present invention has which has nothing to do with Edwards' simple Fleischmann-Pons cell or magnetic field "to distort electrically charged species forming during the electrolysis ..." (page2, lines 15 through 18).

If the present invention, '691, was used as described in Sadoway, it would not even work. If the materials and elements used in Sadoway, here the simple Fleischmann-Pons system with a rudimentary magnetic field to "enhance fusion initiation" [Page 6, line 13], etc., as suggested by the examiner, were to be used in the present invention, they would not function. This present invention has which has nothing to do with Sadoway's simple Fleischmann-Pons cell or magnetic field to "enhance fusion initiation" [Page 6, line 13].

If the present invention, '691, was used as described in Van Noorden, it would not even work. If the materials and elements used in Van Noordens, here the simple Fleischmann-Pons system with neutron subsystem, very homogeneous magnetic field through means of "an electric coil in which the electrolysis cell is mounted", and with no extraction., etc., as suggested by the examiner, were to be used in the present invention, they would not function. This present invention has which has nothing to do with Van Noorden's simple Fleischmann-Pons cell, neutron subsystem,very homogeneous magnetic field, and lack of extraction.

If the present invention, '691, was used as described in Dufour, it would not even work. If the materials and elements used in Dufour, here the simple Fleischmann-Pons system with with a voltage source with a "pulse operating range of 10 hertz to 1 MHz" (page 10), etc., as suggested by the examiner, were to be used in the present invention, they would not function. This present invention has which has nothing to do with Dufour's simple Fleischmann-Pons cell or with a voltage source with a "pulse operating range of 10 hertz to 1 MHz" (page 10).

375. Attention is directed to the fact that the following elements shown in Edwards (WO 90/15416), magnetic field "to distort electrically charged species forming during the electrolysis process at the anode or cathode to control the rate of fusion of charge atoms" (page2, lines 15 through 18), electrolysis sought, are not needed in the present invention, thereby proving the present invention has significant novelty and non-obviousness.

Attention is directed to the fact that the following elements shown in Van Noorden (NL 8909-962-A) generator of neutrons, very homogeneous magnetic field, are not needed in the present invention, thereby proving the present invention has significant novelty and non-obviousness.

Attention is directed to the fact that the following elements shown in Dufour (WO 91/01036), a voltage source with a "pulse operating range of 10 hertz to 1 MHz" (page 10), are not needed in the present invention, thereby proving the present invention has significant novelty and non-obviousness.

376. The original specification teaches (page 4, line 26 through page 5, line 3), the best mode contemplated by the inventor of carrying out his invention

" ...label 1 represents the metallic cathode, usually palladium in the preferred configuration. ... The label 7 represents the anode which in the preferred embodiment is composed of palladium. The label 6 represents the solution consisting in the preferred embodiment of a gel containing antidesiccant, in combination with LiOD, palladium salts, and heavy water (D2O). "

Where are these in the cited references?

377. The original specification teaches (page 5, lines 14-22), the best mode contemplated by the inventor of carrying out his invention using the first applied electric field intensity (referring to the figures).

"Figure 2 is a crossectional drawing .... (t)his device has two orthogonal applied electric fields. The first (labelled E-field number 1 in the the figure) is that which is applied to charge the palladium with deuterons."

The original specification continues (page 5, lines 17-22) with the best mode contemplated by the inventor of carrying out his invention using the second applied electric field intensity.

"The second applied electric field intensity is delivered after full charging has been achieved. In the figure the anode and cathode are labelled as 7 and 1. The electrolyte solution or gel is labelled as 6. The connections for the first electric field are labelled as 81 and 82. The connections for the second electric field are labelled as 85 and 86. The mechanical casing is labelled 20."

Where are these in the cited references?

378. The original specification teaches (page 5, lines 23-25) the best mode contemplated by the inventor of carrying out his invention with respect to the impermeable barrier (referring to the figures).

"The deuteron impermeable barrier is comb-shaped in this preferred configuration, and is labelled 55 in figure 13."

The original specification teaches (page 6, lines 1-5) and elaborates for those skilled in the art to make and use the subject matter defined by each of the rejected claims.

"The cathode in this preferred configuration is divided into parallel slabs. Between these slabs alternate deuteron-impermeable barriers. Application of the second electric field causes the deuterons already loaded in the cathode to redistribute, but the deuteron-impermeable barrier(s) act to enhance the desired reactions."

Where is this in the cited references?

379. As the original specification teaches (page 6, lines 7-13), the best mode contemplated by the inventor of carrying out his invention

"Each device is equipped with orthogonal applied electric fields. The second applied electric field intensity is delivered after full charging. These devices each contain a cathode (labelled 1), intradevice gel containing lithium and palladium deuteroxide (labelled 6), and anode (labelled 7)."

The original specification teaches (page 7, lines 1-4), the best mode contemplated by the inventor of carrying out his invention

"The result is the piling up of deuterium at the deuteron-impermeable barriers (labeled 55). The heat energy is directed out via the the heat pipes and the thermal bus."

Where are these in the cited references?

380. In one embodiment, as the original specification continues, detailed instructions are taught for producing the desired result (page 6, lines 15-24),

"These CAM devices are inserted, similar to a fuse onto a holding board, held in place by clips ... The three CAM device are connected to a microprocessor control system... Said apparatus has an electrical bus to

connect the anodes which are connected to the anodic connectors (labelled 82). Said apparatus has an electrical bus to connect the cathodes ... The cathodic system buses (106 and 107) are electrically shorted together during the deuterium charging."

Where are these in the cited references?

381. Each of these features, and those of the original specification of which this is the divisional, is novel and not obvious. The original specfication describes the subject matter defined by each of the rejected claims, and enables any person skilled in the art to make and use the subject matter defined by each of the rejected claims, and sets forth the best mode contemplated by the inventor of carrying out his invention. The operability and usefulness (that is, enablement) of the original specification was demonstrated to be correct at the time of the original filing in Fusion Technology (of the American Nuclear Society) and elsewhere which demonstrate operability and utility [validation]. These include, but are not limited to, the following: Swartz (1998), Improved Electrolytic Reactor Performance Using π-Notch System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85, Swartz. (1997), Fusion Technology, 31, 63-74.

382. In summary, Westfall, Edwards, Sadoway, Van Noorden, and Dufour are different and distinguishable from applicant's claims and have none of the features of the present invention which is a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material.

When extraction is used, the present invention extracts differently than Edwards, Sadoway, Van Noorden, or Dufour (supra). With MHD (the cited art) the separation is outside of the site of the reactions, which is quite different from the present application where an inhomogeneous applied magnetic field intensity is used within the system to extract product.

This present invention is novel and not anticipated by the cited art. Nowhere in the Examiner's cited art, is any aspect of the features of '691. Thus, the material of Applicant's invention, '691, does not read on Edwards, Sadoway, Van Noorden, or Dufour, as the Examiner suggests, and therefore, the present application is a novel and nonobvious.

LAW

383. With respect to evaluation of claims under 35 U.S.C. 103, 'every portion of the ... claims must be considered in determining ... obviousness' [emphasis added; In re Duva, 156 USPQ 90, 94 (CCPA 1967)]. The Court, in reversing the Office in In re Kuderna and Phillips, 165 USPQ 575, 578- (CCPA 1970), referred to the 'sum of the relevant teaching in the art, ' pointing out that the Office is not allowed to 'view ... first one and then another of isolated teachings' when determining that 'the subject matter as a whole would have been obvious at the time the invention was made', as required by 35 U.S.C. 103. Particularly pertinent is In re Shuman and Meinhardt, 150 USPQ 54, 57 (CCPA 1966) wherein the court said:

> **'References are evaluated by ascertaining the facts fairly disclosed therein as a whole. It is impermissible to first ascertain It is factually what appellants did and then view the prior art in such a manner as to select from the random facts of that art only those which may be modified and the utilized to reconstruct appellant's invention from such prior art. [Emphasis added.]**

It is basic that the claims define the invention. The courts have said that:

> **'All words in a claim must be considered in judging the patentability of that claim against the prior art ... ', In re Wilson, 165 USPQ 494 (CCPA 1970). The terms in the claims 'should be given the meaning they would have 'to one of ordinary skill in the pertinent art when read in the light of and consistently with the specification ...', In re Benson and Tabbott, 169 USPQ 548, 552 (CCPA 1971).**

The Court of Custom and Patent Appeals in In re Langer and Haynes, 175 USPQ 169, 171 (CCPA 1972) and as to a rejection based upon prior art teachings, said:

> **'This court has said that '(a)ll of the disclosures in a reference must be evaluated for what they fairly teach (emphasis added) one of the ordinary skill in the art.'**

384. Where is the method of the claims taught in the references? How were all portions of the claims considered in determining obviousness? Does Westfall, Cedzyn-ska, Edwards, Sadoway, Van Noorden, or Dufour act as a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means

including barriers impermeable to the flow of said isotopic fuel within said material, as the Examiner purports? No.

Does Westfall, Cedzynska, Edwards, Sadoway, Van Noorden, or Dufour extract product using an inhomogeneous magnetic field intensity which has forces which go as (μ H) *(μ H) as the Examiner purports? No.

385. The figures and claims of Westfall, Cedzynska, Edwards, Sadoway, Van Noorden, or Dufour are intended to, and do, serve a different purpose than does the figures and Claims 1, 5 through 8, 10 through 14, and 21 through 30 in the present invention, and Edwards, Sadoway, Van Noorden, or Dufour adds nothing of substance to Westfall.

None of the references to which the Examiner refers are concerned with this application's novel means to a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material, followed by extraction of product using an inhomogeneous magnetic field intensity which has forces proportional to (μ H) *(μ H).

None of the references suggests, alludes to, or teaches a structure as defined by the Claims 1, 5 through 8, 10 through 14, and 21 through 30 of this invention of Figure 2, therein.

Unsuggested Combination:

386. There is no suggestion in the references themselves that they be combined, or could be combined.

Where was the suggestion of the desirability of the modification? Indeed, neither of the references suggests, alludes to, or teaches a structure as defined by the claims of this invention, and as should be apparent?

The need for the prior art references themselves to suggest that they can be combined is well known. Therefore, of what relevance then is Westfall, Cedzynska, Edwards, Sadoway, Van Noorden, or Dufour?

On the matter of applying references to claimed subject matter [eg. cf. In re Mercier, 185 U.S.P.Q. 774, (CCPA, 1975)]:

'These and other questions arise because the board's approach fails to recognize that all of the relevant teachings of the cited references must be considered in determining what they fairly teach to one having ordinary skill in the art. * * * 'The relevant portions of a reference include not only those teachings which would suggest particular aspects of an invention to one having ordinary skill in the art, but also those teachings which would lead such a person away from the cited invention.'

As was stated in In re Sernaker, 217 U.S.P.Q. 1,6 (CAPC 1983)]:

d'(P)rior art references in combination do not make an invention obvious unless something in the prior art references would suggest that advantage to be derived from combining their teachings.'

3887 The suggestion to combine the references should come from the prior art, rather than from applicant. As was forcefully stated in Orthopedic Equipment Co. Inc. v, United States, 217 U.S.P.W. 193, 199 (CAPC 1983):

'It is wrong to use the patent in suit [here the patent application] as a guide through the maze of prior art references, combining the right references in the right way to achieve the result of the claims in suit [here the claims at issue]. Monday morning quarterbacking is quite improper when responding the question of nonobviousness in a court of law [here the Office].'

Indeed, what the Office has done here is to

'pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art'

[In re Umbrecht, 160 USPQ 15, 19 (CCPA 1968)].

There is no teaching in the references that would support the combination the Office uses to reject the claims. The applicable law will now be noted in greater detail.

388. **NOTA BENE:** The Examiner is incorrect. In order to combine references there must be a 'suggestion of the desirability' of the combination, In re Noznik, Tatter and Obenauf, 178 USPQ 43, 45 (CCPA 1973). That holding is the reason why the origin of the combination must be given weight -- not only the possibility of such combination; see the reference to 'motivation or reason in Chicago Rawhide {**} which focuses quite clearly on the rationale of recent decisions of the Court of Appeals for the Federal Circuit (CAFC) on the issue of obviousness, as discussed, for example, in In re Gordon, 221 USPQ 1125 (Fed. Cir. 1984), wherein the court said at page 1127:

'The mere fact that the prior art could be so modified should not have made the modification obvious unless the prior art suggested the desirability of the modification. [Emphasis added]

[{**} Ex parte Chicago Rawhide Manufacturing Co., 223 USPQ 351, 353 (Bd. of App. 1984)]

There would be no reason for one skilled in the art to combine such disparate references such as Westfall, Cedzynska, Edwards, Sadoway, Van Noorden, or Dufour to purportedly obtain the present invention as the Examiner has done. Furthermore, there is no suggestion in the references themselves that they be combined, or could be combined that way. Thus the applicant submits that any combination of Westfall with Westfall, Edwards, Sadoway, Van Noorden, or Dufour is an improper one, absent any showing in the references themselves that they can or should be so combined.

389. In the present case, the rejection of certain claims uses the Westfall patent [which is related to electroplating] located far afield from Cedzynska, Edwards, Sadoway, Van Noorden, or Dufour which are in the fields of cold and hot fusion. The applicant submits that any combination of them is an improper one, absent any showing in the references themselves that they can or should be so combined.

390. Where was the suggestion of the desirability of the modification? Indeed, what the Office has done here is to 'pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art', In re Umbrecht, 160 USPQ 15, 19 (CCPA 1968). There is no teaching in the references that would support the combination the Office uses to reject Claims 1, 5 through 8, 10 through 14, and 21 through 30, as should be apparent to the Office.

Thus the applicant submits that any combination of Westfall with Edwards, Sadoway, Van Noorden, or Dufour or the other art is an improper one, absent any showing in the references themselves that they can or should be so combined.

391. None of the references suggests, alludes to, or teaches the structure as defined by Claims 1, 5 through 8, 10 through 14, and 21 through 30. As said in Ex parte Fleischmann, 157 USPQ 155, 156) Bd. of Appeals 1967):

'While as an abstract proposition it might be possible to select features from the secondary references, as the examiner has done, and mechanically combine them with the (other citation) to arrive at appellant's claimed combination, we find absolutely no basis for making such combination neither disclosed nor suggested in the patents relied on.'

392. On the matter of combining references under section 103, no better expression of the law is found then that in Higley v. Brenner, Cmr. Pats., 155 USPQ 481, 484 (CADC 1967):

'The obviousness question here revolves around the Patent Office's combining prior references. Reliance may properly be placed on such a combination to negative patentability where the applicant's subject matter is suggested or 'taught' by the prior references. Application of Van Deventer, 223 F.2d 274, 276 106 USPQ 121, 123 (CCPA 1955); Application of Demarche, 219 F.2d 952, 956, 105 USPQ 65, 69 (CCPA 1955).'

'The test of obviousness, however, must be applied as of the time of the invention and not retrospectively as of the time of the suit. Many things may seem obvious after they have been made and for this reason courts should guard against slipping into the use of hindsight'.

393. Attention is directled to the fact that both Edwards, Sadoway, Van Noorden, or Dufour involve use of a magnetic field using the Lorentz force with the cross-product force ($v \times \mu H$). By contrast, the present invention uses a different group of materials, for a different group of functions, and a different final result. Thus, the present invention is not involved in using the Lorentz force, but teaches an extraction proceedure using an inhomogeneous magnetic field intensity which has forces which goes as $(\mu H) * (\mu H)$, and not $(v \times \mu H)$ as taught in Edwards, Sadoway, Van Noorden, or Dufour. Simply put, the present invention does not use magnetohydrodynamic systems to produce electric energy directly from a nuclear fusion device involving a liquid lithium as taught in Lasche and Wooley. The Examiner's use of Westfall and Cedzynska, Edwards, Sadoway, Van Noorden, or Dufour is improper.

394. The materials used in Westfall, Edwards, Sadoway, Van Noorden, or Dufour do not function as the active material used in the present invention. Furthermore, the use of liquid lithium, solid lithium, liquid metal blankets and plasmas in Lasche and Wooley, are quite different from the present invention.

Simply put, the figures and claims of Westfall, Cedzynska, Edwards, Sadoway, Van Noorden, or Dufour are intended to, and do, serve a different purpose than does the structure defined by claims herein, and Edwards, Sadoway, Van Noorden, or Dufour add nothing of substance to Westfall. Thus the applicant submits that any combination of Westfall with Cedzynska, Edwards, Sadoway, Van Noorden, or Dufour is an improper one, absent any showing in the references themselves that they can or should be so combined.

If either Cedzynska, Edwards, Sadoway, Van Noorden, or Dufour were used in the present invention, or placed in any way into the present invention, the combination would not function. The Examiner's use of Westfall and Cedzynska, Edwards, Sadoway, Van Noorden, or Dufour is improper.

The Examiner's connecting Westfall and either Cedzynska, Edwards, Sadoway, Van Noorden, or Dufour is improper.

Furthermore, how were all portions of the claims considered in determining obviousness?

As is saliently clear, there has not been a fair standard of review.

395. The suggestion to combine the references should come from the prior art, rather than from Examiner. In the present case, the rejection of claims under 35 U.S.C. 103(a) uses the Westfall patent [which is related to producing heat from loaded palladium using the simple technique of F+P modified by a surface layer and is not the present invention which involves a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material.

The Examiner has rejected the claims on the basis of 'random facts' in the art cited and has modified those random facts in a manner without 'motivation or reason' derived from those random facts [Chicago-Rawhide]. However, even picking and choosing bits and pieces of the various references as the Office has done here, does not lead one to the invention as defined by Claims 1, 5 through 8, 10 through 14, and 21 through 30.

ADDITIONAL REASON OVERCOMING THE EXAMINER'S POSITION REGARDING USC 103

The Cited but Non-Applied References

396. The cited but not applied references have been studied but are submitted to be less relevant than the relied upon references.

Additional Reasons Militate In Favor of Unobviousness

397. The applicant respectfully notes to the examiner that there exist additional reasons which militate in favor of unobviousness.

Unexpected Results:

398. Up to now, insofar as the applicant is aware, the prior art cited by the examiner has virtually ignored how to activate isotopic fuel, which is loaded into a material. The device described within the above-entitled application and thus both superior, unsuggested, and unobvious.

Assumed Insolubility.

399. Up to now, many skilled in the art have thought, or have found, that both obtaining fusion of this type, and the specific problem solved by this invention, were insoluble. The failures of much prior art, including but not limited to those cited by the examiner, indicates that a solution of these problems was, therefore, not obvious. This general lack of an obvious solution is discussed in the above-entitled application.

400. In summary, the cited references cannot be combined in the manner suggested and the claimed features of the invention described in the above-entitled application are lacking in the cited references. The present invention is distinct from the prior art and other art. None of the references shows a method which includes in combination supplying an isotopic fuel to said material, loading said isotopic fuel into said material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material as taught in the above-entitled patent application. Applicant submits that the above-recited novel features in the independent claims, and hence in all claims, provide new and unexpected results and hence should be considered unobvious, making the claims patentable under Section 103.

The Appellant has explained in detail (supra) how the cited art are different and therefore produce a different result from the present invention. Applicant has given lists of additional critical features and components which distinguish Applicant's invention to operatively function in a different manner to the cited art. Therefore, in accordance with the foregoing arguments, Applicant has fully conformed with the requirements of section 103 of the Patent Act; and further, that Claims 1, 5 through 8, 10 through 14, and 21 through 30 of the present invention clearly define patentable subject matter. These claims are patentable over the cited references because the claims recite novel structure and thus are distinguished physically over every reference [Sec. 102], and the physical distinctions effect new and unexpected results, thereby indicating that the physical distinction is simply not obvious [Sec. 103]. Given the above, reconsideration of the rejection of claims is respectfully requested.

ARGUMENTS - Claim Rejection under 35 USC 101 Rejection

401. The Office knowingly, falsely, states,

"Claims 1, 10, 11, 21, 22, and 24-30 are rejected under 35 U.S.C. 101 because the claimed invention as disclosed is inoperative and therefore lacks utility".
Claims 1, 5-8, 10-14 and 21-30 are rejected under 35 U.S.C. 101 because the claimed invention as disclosed is inoperative and therefore lacks utility. .... There is no reputable evidence of record to indicate the invention has been reduced to the point of providing in current available form, an operative cold fusion system. The invention is not considered as meeting the requirements of 35 U.S.C. 101 as being "useful". Note in this respect, Page A14 of the 7/13/89 edition of The Washington Post which indicates that there is no convincing evidence that the "phenomena attributed to cold fusion would produce useful sources of energy".

All Claims are rejected under 35 U.S.C. 101 by the Examiner, based upon flawed reference to other art ("FP" or "F+P") and by what appears to be the Examiner's ignoring said submitted Declarations of fact and accompanying Exhibits. The appealed claims do not stand or fall together. Claims 1, 10, and 21 are separately patentable and do not stand or fall together because they are materially distinct with respect to 35 USC 101. Claims 1, 10, and 21 are separately patentable because they are not unduly multiplied, have separate limitations, and are required because the invention described by the original specification of the above-entitled application is very complex.

The Claims are rejected under 35 U.S.C. 101 in the Examiner's and Office's flawed notion and discriminatory, unscientific, and inaccurate opinion, aided by disingenuous statements and irrelevant cited art. However, Title 35 U.S.C. 101 provides for the issuance of a patent to a person who

> **"invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title." [450 U.S. 175, 182].**

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These Claims are compliant with 35 U.S.C. 101 because the claimed invention as disclosed is operative and has utility. Pursuant 35 U.S.C. 101, Applicant is entitled to a patent for his new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement there. This will be shown in detail below (as it has been above).

402. The invention at issue in this case, '691, has much utility. It is claimed by Claims 1, 5-8, 10-14, 21-30, is generally speaking a method to control hydrogen loaded into a metal such as palladium. Such loading by hydrogen occurs much as a sponge fills (loads) with water. This invention uses the hydrogen as a fuel, and for each device usually one isotope of hydrogen (protium or deuterium) is chosen (loaded into nickel or palladium, respectively). Specifically, the above-entitled invention is a method to control the production of the desired products (such as heat). This includes in combination loading the hydrogen using a first applied electric field, and then at a later point in time applying a second electric field to redistribute said isotopic fuel within said material, with means to obstruct the flow of the loaded hydrogen.

403. The original specification states (page 1, lines 7-8) this subject matter is a method of great utility

The original specification teaches (page 4, line 26 through page 5, line 3), the best mode contemplated by the inventor of carrying out his invention

> **" ...label 1 represents the metallic cathode, usually palladium in the preferred configuration. ... The label 7 represents the anode which in the preferred embodiment is composed of palladium. The label 6 represents the solution consisting in the preferred embodiment of a gel containing antidesiccant, in combination with LiOD, palladium salts, and heavy water (D2O). "**

The original specification teaches (page 5, lines 14-17), the best mode contemplated by the inventor of carrying out his invention using the first applied electric field intensity (referring to the figures).

"Figure 2 is a crossectional drawing .... (t)his device has two orthogonal applied electric fields. The first (labelled E-field number 1 in the the figure) is that which is applied to charge the palladium with deuterons."

The original specification continues (page 5, lines 17-22) with the best mode contemplated by the inventor of carrying out his invention using the second applied electric field intensity.

"The second applied electric field intensity is delivered after full charging has been achieved. In the figure the anode and cathode are labelled as 7 and 1. The electrolyte solution or gel is labelled as 6. The connections for the first electric field are labelled as 81 and 82. The connections for the second electric field are labelled as 85 and 86. The mechanical casing is labelled 20."

The original specification teaches (page 6, lines 1-13) subject matter of great utility.

"The cathode in this preferred configuration is divided into parallel slabs. Between these slabs alternate deuteron-impermeable barriers. Application of the second electric field causes the deuterons already loaded in the cathode to redistribute, but the deuteron-impermeable barrier(s) act to enhance the desired reactions."

"Each device is equipped with orthogonal applied electric fields. The second applied electric field intensity is delivered after full charging. These devices each contain a cathode (labelled 1), intradevice gel containing lithium and palladium deuteroxide (labelled 6), and anode (labelled 7)."

In one embodiment, as the original specification continues, detailed instructions are taught -- features of great utiliity (page 6, lines 15-28),

"These CAM devices are inserted, similar to a fuse onto a holding board, held in place by clips ... The three CAM device are connected to a microprocessor control system... Said apparatus has an electrical bus to connect the anodes which are connected to the anodic connectors (labelled 82). Said apparatus has an electrical bus to connect the cathodes ... The cathodic system buses (106 and 107) are electrically shorted together during the deuterium charging."

"Said apparatus has a thermal bus connected to the heat pipes which are held in a mechanical connecting system (labelled 20)."

404. Each of these features, and those of the original specification of which this is the divisional has obvious great utility. The original specfication describes the subject matter defined by each of the rejected claims, and enables any person skilled in the art to make and use the subject matter defined by each of the rejected claims, and sets forth the best mode contemplated by the inventor of carrying out his invention. The usefulness of the original specification was demonstrated to be correct at the time of the original filing in Fusion Technology (of the American Nuclear Society) and elsewhere which demonstrate operability and utility [validation]. These include, but are not limited to, the following: Swartz (1998), Improved Electrolytic Reactor Performance Using π-Notch System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85, Swartz. (1997), Fusion Technology, 31, 63-74. Based upon the Evidence which the Office, and past Examiner, have removed from the file folder and/or otherwise systematically ignored, it can be seen that the Applicant has set forth an invention of great utility within the meaning of 35 U.S.C. 101. See Brennerv. Manson, 148 U.S.P.Q. 689.

Invention's Utility Confirmed by Claims

405. Proof of conformity of the claims with 35 U.S.C. 101 can be understood by first examining Claim 1, starting with the preamble. To emphasize, and corroborate, this fact more clearly, note:

(1) the preamble of claim 1 recites the purpose of the apparatus "In a process for producing a product using a material loaded with an isotopic fuel, a method to control the production of said product".
(2) the steps are able to each stand alone (MPEP 2111.02).

1.In a process for producing a product using a material loaded with an isotopic fuel, a method to control the production of said product which includes in combination:
applying an electric field to load said isotopic fuel to said material,
loading said isotopic fuel into said material,
applying a second electric field in a non-parallel direction to the first applied electric fields,
producing redistribution of said isotopic fuel within said loaded metal,
thereby controlling the product produced.

In this case, Claim 1 claims a method where each part can be easily understood to persons with normal engineering skill in any art.

Therefore, claim 1 can be asserted to have justifiable utility when the preamble is put in proper perspective.

406. One of the most important points regarding Office rejections under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph, is that the claimed invention should be the focus of the utility requirement.

- "Each claim therefore, must be evaluated on its own merits for compliance with all statutory requirements" (MPEP 2107.01, I.).

Further regarding the question of utility, claim 1 must be given the broadest reasonable interpretation.

> **"Reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from 'reading the limitations of the specification into a claim,' to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim"- In re Prater.**

Therefore, Claim 1 has, and all of the claims have, justifiable utility as a method to determine the optimum electrical drive condition for said sample and thereby characterize said sample, when a broader interpretation is given to it.

407. The proof of conformity of the claims with 35 U.S.C. 101 can be understood by examining Claim 1, and then dependant claims.

The original specification teaches precisely and specifies for those skilled in the art, the issue of loading which the present invention measures. The original specification continues,with an overview of instructions teaching the apparatus for producing the desired result.

The original specification teaches why this invention has great utility: the measurement of loading.

This is subject matter for which the present invention has great utility.

Invention's Utility Confirmed by Declarations

408. The above-entitled invention, '058 (like '457 before it - and from which it is a continuation) has utility, as confirmed by the unrebutted, essentially ignored, Declarations.

Applicant has completely undertaken the full burden of coming forward with his evidence before the Final, as required [In re Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444]. The Declarations were and are submitted with discussion of how their statements have relevance to the current application, and the behavior of the Office, and why said statements pertain to, and rebut, the Examiner's rejections.

409. The Examiner's Response is non-responsive to the submitted Declarations and *Amicus Curiae* Briefs which remain unrebutted and which corroborate both the "utility" of these teachings. In this case, as in S/N 07/760,970 and Federal Appeals Court 00-1108, the Office is disingenuous -- and obviously, egegiously disingenuous because the Office has ignored the many Declarants who affirm utility.

For example, the Examiner's Response is non-responsive to the Rotegard Declaration:

> **"If only a few labs had reported success, then skepticism of cold fusion would be viable. Several research teams reported positive finding on the original Fleischmann Pons effect at the Fourth International Conference on Cold Fusion in December 1993. I submit that Occams razor would dictate that the phenomena is real and has been "reproduced" to the point of overkill.**
>
> **"Major research institutions, industrial corporations and established scientific journals of international repute have endorsed the reality of cold fusion and are acting to explore and benefit from this reality. *** These trends would lead a prudent person to conclude that there is substance to the research cited above. Therefore, developments and inventions in this area have great utility."**
>
> [Declaration of Dana R. Rotegard, 1994]

As another example, the Examiner's Response is non-responsive to the fact that Dr. McKubre stated:

> **"For me, the best heat report, and perhaps the best report at this conference, was that of Mitch Swartz. ... I have not been able to perform the experiments myself, successfully, and I have always felt that the quality of the calorimetric observations in the nickel light water studies has been less than the quality of the calorimetric observations in the palladium-detuerium system. ... Mitch Swartz presented a very clear piece of calorimetric evidence which is cerainly going to cause me to reconsider my belief and**

understanding of the nickel-light water system and its capacity to produce anomalous heat"

[Dr. Michael McKubre, SRI, Infinite Energy, 4, 20 , pp.34-35, (1998)]

The Examiner's Response is also non-responsive to the fact that Dr. Rehn, U.S. Navy, said

"Perhaps the clearest scientific fact, at this time, is the hardest for physicists to accept: nuclear reactions apparently do occur in deuterium-loaded Pd, Ti, and probably in other solids."

[Office of Naval Research Asian Office, NAVSO P-3580, Vol. 18, Jan. 1993].

This confirms that Dr. Will, another Office witness, said,

"Significant positive results have been obtained (by) 100 groups from more than 12 countries"

[Final Report NCFI (1991)].

The Examiner's Response is non-responsive to the fact that controlled nuclear fusion offers the possibility of an inexpensive source of energy for the United States and is of great utility. The original specification has explicitly indicated why there is great utility of both the field and the present invention. Energy needs dominate both the economy and welfare of humanity as has been shown historically. Therefore, this technology has great utility to society.

410. In the international community, Dr. McKubre is among the most highly regarded of those skilled in the art. Dr. McKubre stated:

"For me ... perhaps the best report at this conference, was that of Mitch Swartz. ... I have always felt that the quality of the calorimetric observations in the nickel light water studies has been less than the quality of the calorimetric observations in the palladium-deuterium system. ... Mitch Swartz presented a very clear piece of calorimetric evidence which is certainly going to cause me to reconsider my belief and understanding of the nickel-light water system and its capacity to produce anomalous heat" [Dr. Michael McKubre, SRI, at his closing "Summary During ICCF-7", Infinite Energy, 4, 20 , pp. 34-35, (1998)]

411. Proof of utility should be judged either by those using the invention or those skilled in the art. Validation occurs when scientists actually skilled, and working, in the state-of-the-art state it to be so. These are scientists who research and actually write the current scientific technical papers which undergo peer-review, file patent applications, and attend international conferences. They absolutely disagree with the Examiner on this. In this case, the invention and its utility are convincing to several of ordinary

skill in the art who have stated so at public meetings and the invention meets several stated objectives.

412. Utility is a fact question, and proof of utility is sufficient if it is convincing to one of ordinary skill in the art or if it meets at least one stated objective. The Declarations prove that a person of ordinary skill in the art would have understood the inventor to have been in possession of the claimed invention at the time of filing. Straus and Swartz contain factual statements directly addressing how the specification adequately described the subject matter recited in the claims and demonstrate that it operates as stated. They also herald that a person of ordinary skill in the art would have understood the inventor to have been in possession of the claimed invention at the time of filing. Other Declarants, such as Mallove, Rotegard, Straus, Storms, Fox, Valone, McKubre, S. Chubb and T. Chubb demonstrate that the above-entitled invention has great utility, heralding conformity with the requirements of §101. The Declarations and Amicus Briefs demonstrate that vibrational modes of a material are not "incredible" but that the Examiner has been needlessly harassing the Applicant. The Declarations and Amicus Briefs demonstrate that for one skilled-in-the-art this invention has great utility to monitor a vibrating electrode without undue experimentation to follow loading. These, and other, Declarations show precisely where the Examiner was inaccurate, and affirm that the teachings were sufficient for those skilled in the art. They indicate that Applicant taught correctly in the original specification and claims regarding said monitored vibrating electrode. The submitted Declarations are convincing to anyone who is not biased. The Declarations demonstrate that the original specification and claims clearly define subject matter of considerable utility. Said Declarations constitute a bona fide case, and completely address the Examiner's points of rejection.

413. Once again, the Applicant has undertaken the full burden of coming forward with his evidence before the Final, as required [In re Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444]. The Declarations have been submitted with discussion of how their statements have relevance to the current application, and the behavior of the Office, and why said statements pertain to, and rebut, the Examiner's rejections.

414. The Affiants have been sworn, but the Examiner has not. Attention of the federal investigatory agencies and the federal court are directed to this matter given the seemingly widespread disingenuity by some in the USPTO with discrimination under color of Law, in a case, the above-entitled application involving efficient, clean energy production, made SPECIAL by the Board of Patent Appeals, and continuing while the United States of America has thereafter been at war involving energy.

Invention's Utility Confirmed by Peer Reviewed Publications

415. Applicant taught in the original specification and claims how his apparatus works. That operability of this systems is further corroborated by peer reviewed published articles. The published papers include those in "Fusion Technology" of the American Nuclear Society. The published papers include Swartz, M.R. "Survey of the Observed Excess Energy and Emissions In Lattice Assisted Nuclear Reactions", Journal of Scientific Exploration, 23, 4, 419-436 (2009), Swartz, M., "Excess Heat from Low Electrical Conductivity Heavy Water Spiral-Wound Pd/D2O/Pt and Pd/D2O-PdCl2/Pt Devices", Condensed Matter Nuclear Science, Proceedings of ICCF-10, eds. Peter L. Hagelstein, Scott, R. Chubb, World Scientific Publishing, NJ, ISBN 981-256-564-6, Pages 29-44; 45-54, and 213-226 (2006), Swartz, 1998, Improved Electrolytic Reactor Performance Using p-Notch System Operation and Gold Anodes, Transactions of the American Nuclear Association, Nashville, Tenn 1998 Meeting, (ISSN:0003-018X publisher LaGrange, Ill) 78, 84-85 and Swartz(97), and other peer-review papers.

416. These peer-reviewed publications are submitted by the Applicant to show that growing numbers of the scientific community consider the positive results of Appellant's work as being operative and of great utility. They disagree with the Examiner's notion that clean, efficient energy production is of no utility.

417. The publications submitted by the Applicant are sufficient to convince one of ordinary skill in the art of the invention's utility (Swartz, 232 F.3d at 864).

418. These peer-reviewed publications (like the timely submitted Declarations) establish facts. Such Evidence consisting of published peer-reviewed scientific articles, proves Applicant was correct on the filing date of the application, and does meet the bar of enablement [In re Hogan, 559 F.2d 595, 60S, 194 USPQ 527, 537 (CCPA 1977)].

LAW

419. The Examiner's Response is non-responsive to the fact that he is incorrect and substantively contradicted by Drs. Chubb, Fox, Mallove, McKubre, and by the Office's own previous witnesses, Dr. Rehn and Dr. Will. This is important because proof of utility should be judged either by those using the invention or those skilled in the art. Corroborating this, validation occurs when scientists actually skilled, and working, in the state-of-the-art state it to be so. These scientists who write the current scientific technical papers which undergo peer-review, file patent applications, and attend international conferences (which have gone on for thirteen years) and they absolutely disagree with the Examiner.

420. The Examiner's Response is non-responsive to the fact that utility is a fact question, and proof of utility is sufficient if it is convincing to one of ordinary skill in the art or if it meets at least one stated objective. Here it does. Unrebutted Declarations have been submitted in this case, and are again submitted, and the Examiner must respond to them substantively [Marino v. Hyatt Corporation; Morrill v. Tong; and Chelebda v.H.E. Fortuna & Brothers Inch]. Furthermore, the Examiner has rejected Marino v.Hyatt Corporation, 793 F.2d 427, 430 (1st Cir. 1986); Morrill v.Tong, 390 Mass. 1207 129 (1983); Chelebda v.H.E. Fortuna & Brothers Inch 609 F.2d 1022 (1st Cir. 1979); Lewis v. Bours, 119 Wn.2d 667, 670, 1992] which require the Examiner to assume that the Declarants' assertions are true. The Declarations demonstrate that the original specification and claims clearly define subject matter of considerable utility. Therefore, the Applicant has fully conformed with, and satisfied, the requirements of §101 of the Patent Act and met at least one (1) stated objective [Standard Oil Co. (Indiana) v.Montedison, S.P.A., 664 F.2d 356, 375, 212 USPQ 327, 344 (3rd Cir. 1981), cert. denied, 456 U.S. 915, 102 S.Ct. 1769, 72 L.Ed.2d 174 (1982); E.I. du Pont de Nemours & Co. v.Berkley & Co.,620F.2d1247,1258 n.10,1260 n17,205 USPQ1,8n10,10n.17(8th Cir.1980); Krantz and Croix v.Olin, 148 USPQ 659, 661-62 (CCPA 1966); Chisum on Patents, 4.04[4] [1983]; RAYTHEON COMPANY v.ROPER CORPORATION, U.S.C.A., Federal Circuit, 1983, 724 F.2d 951, 220 USPQ 592].

The Examiner Mistakes a Question of Fact for a Question of Law

421. The Examiner's Response is non-responsive to the fact that the Examiner dismisses the affiants discussing Applicant's inventions as opinion. However, Declarants' statements and the peer-reviewed publications are Fact. The Examiner has mistaken a question of fact for a question of law. The Examiner cannot dismiss Declarations improperly to "opinion"-status without an adequate explanation of how the Declarations failed to overcome the prima facie case initially established by the Examiner. The Examiner has rejected In re Alton which requires that even the use of the words "it is my opinion" to preface what someone of ordinary skill in the art knows does not transform the factual statements contained in the declaration into opinion testimony. Exactly how many Declarants does it take to overcome the Examiner's unsubstantiated rejection?

422. The Examiner's Response is non-responsive to the fact that the Examiner has ignored the directive of 1.131 (a)(1) which requires that

"When ... a patent ... is rejected .... on reference ... to a printed publication, the inventor of the subject matter of the rejected claim ... may submit an appropriate oath or declaration to overcome the patent or publication."

423. The Examiner has not followed the standards of review. The Office's own rule [M.P.E.P. §2111.01] requires that "the words of a claim ... must be read as they would be interpreted by those of ordinary skill in the art". In this case, given the averments of so many, utility under USC 101 is clearly shown.

"Utility is a fact question, see e.g., Wilden Pump v. Pressed & Welded Products Co, 655 F.2d 984, 988, 213 USPQ 282, 285 (9th Cir. 1981); Nickola v. Peterson, 580 F.2d 898, 911, 198 USPQ 385, 399 (6th Cir. 1978), cert. denied, 440 U.S. 961, 99 S.Ct. 1504, 59 L.Ed.2d 774 (1979)." [RAYTHEON COMPANY v. ROPER CORPORATION, U.S.C.A., Federal Circuit, 1983, 724 F.2d 951, 220 USPQ 592]]

"When a properly claimed invention meets at least one stated objective, utility under 101 is clearly shown. See e.g., Standard Oil Co. (Indiana) v. Montedison, S.P.A., 664 F.2d 356, 375, 212 USPQ 327, 344 (3rd Cir. 1981), cert. denied, 456 U.S. 915, 102 S.Ct. 1769, 72 L.Ed.2d 174 (1982); E.I. du Pont de Nemours & Co. v. Berkley & Co., 620 F.2d 1247, 1258 n. 10, 1260 n. 17, 205 USPQ 1, 8 n. 10, 10 n. 17 (8th Cir.1980); Krantz and Croix v. Olin, 148 USPQ 659, 661-62 (CCPA 1966); Chisum on Patents, 4.04[4] [1983]." [RAYTHEON COMPANY v. ROPER CORPORATION, U.S.C.A., Federal Circuit, 1983, 724 F.2d 951, 220 USPQ 592]]

"Proof of utility is sufficient if it is convincing to one of ordinary skill in the art. In re Irons, 52 CCPA 938, 340 F.2d 974, 144 USPQ 351 (1965). The amount of evidence required depends on the facts of each individual case. In re Gazave, 54 CCPA 1524, 379 F.2d 973, 154 USPQ 92 (1967). The character

and amount of evidence needed may vary, depending on whether the alleged utility appears to accord with or to contravene established scientific principles and beliefs. In re Chilowsky, 43 CCPA 775, 229 F.2d 457, 108 USPQ 321 (1956)."

[In Re JOLLES, U.S.C.P.A., 1980. 628 F.2d 1322, 206 USPQ 885]

424. The Examiner's Response is non-responsive to the fact that the Examiner has changed the standards of review. The Examiner has rejected In re Zurko [142 F.3d 1447, 1449, 46 USPQ2d 1691, 1693 (Fed. Cir.), cert. granted, 119 S. Ct. 401 (1998)] which declares that utility is a fact question [RAYTHEON COMPANY v.ROPER CORPORATION, U.S.C.A., Federal Circuit, 1983, 724 F.2d 951, 220 USPQ 592], and one which the Examiner in this case must review for clear error [Cross v.Iizuka, 753 F.2d 1040, 1044 n.7, 224 USPQ 739, 742 n.7 (Fed. Cir. 1985); also In re Zurko].

In re Irons indicates that utility is a fact question [RAYTHEON COMPANY v. ROPER CORPORATION]. The submitted Declarations and the publications (including e.g. McKubre) are relevant as proof of utility. They demonstrate utility and operability at the time of the filing of this patent, and that it was, and is, important and of considerable utility.

The Examiner has rejected In re Ziegler [992 F.2d 1197, 1200, 26 USPQ2d 1600, 1603 (Fed. Cir. 1993)] which requires the Examiner accept Declarations as factual proof of utility.

The Examiner has rejected In re Ferens [417 F.2d 1072, 1074, 163 USPQ 609,611 (CCPA 1969)] which heralds that Applicant's submitted evidence, including Declarations, is sufficient.

The Examiner has rejected Ex parte Porter which requires that Declarations, submitted in response to the Examiner's comments, must be read, examined, and carefully considered.

The Examiner has rejected In re Morris [127 F.3d 1048, 1053-56, 44 USPQ2d 1023, 1027-30 (Fed. Cir. 1997)] which demands that the interpretation of operability and utility is predicated upon that which one who is skilled-in-the-art would reach. The Examiner must given the claims their broadest reasonable interpretation consistent with that which those skilled-in-the-art would reach.

The Examiner has rejected In re Oetiker [977 F.2d at 1445, 24 USPQ2d at 1444] which requires the Examiner substantively and fully respond to the probative witnesses, because Applicant has undertaken the full burden coming forward.

The Examiner has rejected Ex parte Gray [10 USPQ2d 1922, 1928 (Bd. Pat. App. & Inter. 1989)] which allows for Applicant's submitted expert testimony regarding operability and utility, beyond the detailed specification. The Examiner must give substantial weight to said Declarations about what they said about this invention compared to the Examiner's art regarding the work of others.

The Examiner has rejected In re Brana, 51 F.3d at 1566, 34 USPQ2d at 1441] which indicates Applicant's actions hereby meet the "burden shift ... to provide rebuttal evidence sufficient to convince such a person of the invention's asserted utility".

The Examiner has rejected In re Marzocchi and In re Oetiker which require responsive argument to the fully addressed criticism against the Examiner's unfounded notions. In re Marzocchi, 439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971)] declares that the Examiner cannot make the rejection he has unless he has reason to doubt the objective truth of the statements contained in the written description, here corroborated and supported by multiple Declarations.

ADDITIONAL REASON OVERCOMING THE EXAMINER'S POSITION REGARDING USC 101

Transformation for Inactive to Active is Patentable even without the Other Features

425. Utility is a fact question, and proof of utility is sufficient if it meets at least one stated objective. Here it does - a method to increase loading.

Furthermore, a method to increase loading necessarily involves transformation of a state or thing. Therefore, the Examiner has not followed the standards of review because such a two state method should be patentable based upon opinion of the Court.

"Transformation and reduction of an article "to a different state or thing" is the clue to the patentability of a process claim that does not include particular machines."

[GOTTSCHALK v. BENSON, 409 U.S. 63 (1972),
409 U.S. 63, No. 71-485]

"Industrial processes such as this ["a physical and chemical process (which involves) the transformation of an article .... into a different state or thing"] are the types which have historically been eligible to receive the protection of our patent laws. [450 U.S. 175, 185]"

[DIAMOND v. DIEHR, 450 U.S. 175 (1981)]

ADDITIONAL REASON OVERCOMING THE EXAMINER'S POSITION REGARDING USC 101

The Examiner Ignores Constitutional and Congressional Directive and Authority

426. The Examiner has rejected the controlling authority of Art. I, §8, cl. 8 which provides that

"Congress shall have Power (t)o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."

Art. I, §8, cl. 8 empowers Congress in this matter.

The Examiner has rejected that the US Congress has mandated progress.

"The patent laws (reflect) this Nation's deep-seated .... need to encourage progress."

[DIAMOND v. CHAKRABARTY, 447 U.S. 303 (1980),
447 U.S. 303, No. 79-136]

The Examiner has rejected that the US Congress has mandated encouragement of science, and the Office's actions are inconsistent with the Patent Act of 1793, authored by Thomas Jefferson, which defined statutory subject matter as "any new and useful art, machine, manufacture, or composition of matter" Act of Feb. 21, 1793, 1, 1 Stat. 319, and with the Act which embodied Jefferson's philosophy that "ingenuity should receive a liberal encouragement." [447 U.S. 303, 309].

427. Given the facts stated above, and the fact the Office has granted patents to inventions of considerably less "utility" [e.g. Patent 3,580,592 or 3,450,403], any further rejection of the present invention on this arbitrary basis based upon such a presumed "non-utility" would appear to be both capricious, unwarranted, and unreasonable. As the original specification and claims teach, the invention has features of great utility. The Examiner should admit that said features are not "incredible" but can be elicited when using the teachings of the original specification and claims. Furthermore, there is documented existence of these reactions and the preferred environment in which the present invention does operate. The number of papers in this field confirms both the "existence" and "utility" of these phenomena and any associated technologies.

428. Appellant asks the Board, because the Examiner and his supervisor both refused to answer the following question:

Exactly how many Declarants does it take to overcome the Examiner's [unsubstantiated] rejection regarding utility?

CONCLUSION ARGUMENTS - Claim Rejections under 35 USC 101

429. The Office has made an improper and reversible rejection under 35 U.S.C. §101 for any of several reasons. First, proof of utility is sufficient if it is convincing to one of ordinary skill in the art [In re Irons, 52 CCPA 938, 340 F.2d 974, 144 USPQ 351 (1965)]. THIS invention is convincing to several of ordinary skill in the art who have stated so at public meetings and as Declarants and witnesses have stated facts that demonstrate that the original specification and claims clearly define subject matter of considerable utility. The Applicant has taught a method of great utility to many Declarants, all within the meaning of 35 U.S.C. 101 [Brenner v. Manson, 148 U.S.P.Q. 689]. The Declarations thus prove operability and utility of the present invention and demonstrate validation of the Applicant's claimed subject matter. Therefore, the teachings have been corroborated, and therefore there is enablement (a question of law; In re Fouche, 439 F.2d 1237, 1243, 169 USPQ 429, 434, (CCPA 1971)). Enablement, utility, and operability are grounds for patentability.

430. Second, public demonstrations, said Declarations, and the peer-reviewed publications by the American Nuclear Society are Evidence that decimate the Examiner's opinion and discriminatory notions which usurp civil rights.

431. Third, the Examiner has not followed the standards of review, Office rules, or federal law.

i - The Examiner must consider those skilled-in-the-art who oppose and counter his rejection made without serious foundation under 35 U.S.C.§101.

ii - The Examiner has ignored Evidence consisting of the original specification and claims, the submitted Declarations, and publications, which have provided confirmation of utility.

iii - The Examiner ignores In re Brana and In re Eltgroth, 419 F.2d 918, 164 USPQ 221 (CCPA 1970) which demand that the Examiner must establish a reason to doubt an invention's asserted utility. This invention is quite believable. In re Brana, 51 F.3d at 1566, 34 USPQ2d at 1441] indicates Applicant's actions hereby meet the

"burden shift ... to provide rebuttal evidence sufficient to convince such a person of the invention's asserted utility".

iv - The Examiner has rejected In re Marzocchi and In re Oetiker which require responsive argument to the fully addressed criticism against the Examiner's unfounded notions. In re Marzocchi, 439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971)] declares that the Examiner cannot make the rejection he has unless he has reason to doubt the objective truth of the statements contained in the written description, here corroborated and supported by multiple Declarations.

432. Fourth, the Examiner has given no precise, accurate foundation as a basis for his own rejection, and change of, Office rules, and federal law. The examiner should explain why these 'filings' and 'references' are inadequate in evidentiary weight, to overcome the evidence proffered by the examiner.

433. Fifth, the Examiner is biased and has systematically instituted a policy of abusive discrimination and harassment focused on, and directed against, the Applicant. Given the facts stated above, and the fact the Office has granted patents to inventions of considerably less "utility" [e.g. Patent 3,580,592 or 3,450,403], any further rejection of the present invention on this arbitrary basis based upon such a presumed "non-utility" would appear to be both capricious, unwarranted, and unreasonable.

434. This invention (structure, operation and composition) is defined by the claims and the original specification of the above-entitled application and not the art to which the Office refers. The present invention has obvious utility. The original specification and claims teach, the invention solves a long-standing problem and has features of great utility. Therefore, the Applicant has fully conformed with, and satisfied, the requirements of §101 of the Patent Act and met at least one (1) stated objective [Standard Oil Co. (Indiana) v.Montedison, S.P.A., 664 F.2d 356, 375, 212 USPQ 327, 344 (3rd Cir. 1981), cert. denied, 456 U.S. 915, 102 S.Ct. 1769, 72 L.Ed.2d 174 (1982); E.I. du Pont de Nemours & Co. v.Berkley & Co.,620F.2d1247,1258 n.10,1260 n17,205 USPQ1,8n10,10n.17(8th Cir.1980); Krantz and Croix v.Olin, 148 USPQ 659, 661-62 (CCPA 1966); Chisum on Patents, 4.04[4] [1983]; RAYTHEON COMPANY v.ROPER CORPORATION, U.S.C.A., Federal Circuit, 1983, 724 F.2d 951, 220 USPQ 592].

435. In summary, the invention (structure, operation and composition) is defined by the claims and the original specification, and in this case they correctly define the invention, and it the teachings have been corroborated, and therefore there is enablement (a question of law; In re Fouche, 439 F.2d 1237, 1243, 169 USPQ 429, 434, (CCPA 1971)). Enablement, utility, and operability are grounds for patentability. In this case, the Applicant has set forth products and methods which have undergone peer-review, and Declarants and other affiants who have stated as fact that there is utility within the meaning of 35 U.S.C. 101 [Brenner v. Manson, 148 U.S.P.Q. 689].

436. In this case, utility under 101 is clearly shown. Therefore, the Applicant has fully conformed with, and satisfied, the requirements of §101 of the Patent Act. Given the utility, Appellant respectfully requests reconsideration and reversal of the rejection of Claims 1, 10, 11, 21, 22, and 24-30 (all Claims) pursuant to U.S.C. 101, and issuance of the above-entitled application.

Office Failed Previous Requests For Constructive Assistance

437. Applicant notes that the Office has ignored his previous requests in '457 that if, for any reason the claims of this application were not believed to be in full condition for allowance, the applicant respectfully requested the constructive assistance and suggestions of the Examiner in drafting one or more acceptable claims [pursuant to MPEP 707.07(j)] or in making constructive suggestions [pursuant to MPEP 706.03(d)] in order that this application can be placed in allowable condition as soon as possible and without the need for further proceedings. Instead, peer-reviewed publications submitted were removed from the file folder and the invention was misdescribed.

CONCLUSIONS - Final Arguments: THE PATENT SHOULD BE ISSUED

Reason for Reconsideration - Evidence

438. As factual matters, operability and utility are decided by Declarations and peer-reviewed publications going through those skilled-in-the-art.

The Applicant has submitted:

#1) Declarations from scientists of ordinary skill-in-the-art, who considered the specification and stated that the written description was sufficient. Applicant is acknowledged by those involved in the state-of-the-art. Said evidence shows that the Office's position is in error. and

#2) The published peer-reviewed scientific articles. Said evidence also shows that the Office's position is in error.

Either #1 or #2 are sufficient to demonstrate that the specification provides an adequately written description of the subject matter, including how to operate the invention, and claimed the invention so that an artisan, or those skilled-in-the-art, could practice it without undue experimentation. Either #1 or #2 prove that enablement, utility, and validation. Together, #1 and #2 have been submitted and Applicant submits that these together corroborate enablement of the present invention both de facto and de jure. As such, the Declarations and peer-reviewed publications confirm that the Applicant's original specification and claims taught the subject matter defined by each of the rejected Claims including how his apparatus and method works, set forth the best mode contemplated, distinctly pointed out and claimed the subject matter which constitutes the invention, wrote an adequate enabling disclosure, and thus complied and conformed with 35U.S.C.§112, first paragraph, of the Patent Act.

The Applicant has submitted Evidence which demonstrates that the US PTO's notions of LANR are wrong, and that there are extensive positive published results which confirm the generation of products (including de novo helium 4 and excess enthalpy) using isotopic fuel loaded into a material. This Evidence includes the Mallove, Rotegard, Fox, Shaw, Swartz, and other Declarations.

Reason for Reconsideration - The Law

439. The Examiner's opinion - that the written description fails to illuminate a credible utility - has only been made by not reading on the claims of this patent regarding a monitored vibrating electrode, and by either dismissing the Declarations as opinion or ignoring them altogether. The PTO may establish a reason to doubt an invention's asserted utility only when the written description "suggest[s] an inherently unbelievable undertaking or involve[s] implausible scientific principles." Brana, 51 F.3d at 1566, 34 USPQ2d at 1441; see also In re Eltgroth, 419 F.2d 918, 164 USPQ 221 (CCPA 1970)). Here, the Declarations demonstrate the PTO is wrong in their opinion.

440. The Examine cannot make this type of rejection, unless he has reason to doubt the objective truth of the statements contained in the written description [Brana, 51 F.3d at 1566, 34 USPQ2d at 1441 ("[T]he PTO has the initial burden of challenging a presumptively correct assertion of utility in the disclosure. Only after the PTO provides evidence showing that one of ordinary skill in the art would reasonably doubt the asserted utility does the burden shift to the applicant to provide rebuttal evidence sufficient to convince such a person of the invention's asserted utility."); In re Marzocchi, 439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971) ("[A] specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as in compliance with the enabling requirement of the first paragraph of §112 unless there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support."). In this case, given the submitted [and received] Declarations, reason never existed doubting the objective truth of the statements relied on for enabling support. Therefore no basis exists for a rejection under either section 112, ¶1 for lack of enablement as a result of "the specification's ... failure to disclose adequately to one ordinarily skilled-in-the-art 'how to use' the invention without undue experimentation," or section 101 for lack of utility "when there is a complete absence of data supporting the statements which set forth the desired results of the claimed invention." [Environtech Corp. v.Al George, Inc., 730 F.2d 753, 762, 221 USPQ 473, 480 (Fed. Cir. 1984); also In re Brana, 51 F.3d 1560, 1564 n.12, 34 USPQ2d 1436, 1439 n.12 (Fed. Cir. 1995)].

441. The Examiner's rejection is factually wrong as the rejection's statements are directly contradicted by substantive evidence already in the record including unrebutted Declarations, and over 140 pounds of exhibits from '457 (hereby also attached for the convenience of the Examiner and the Boardwhich fully addressed all matters criticized

by the Office previously sent to the USPTO (and the Applicant has the postal stamps of the USPTO to prove it). These have probative value. Nothing has been presented which differs or rebuts the Declarations.

442. The Examiner's rejection ignores that there is Obligation by the Office to assume that Petitioner's Declarants' unrebutted assertions --made before the Appeal-- are true [Lewis v. Bours, 119 Wn.2d 667, 670, 1992].

443. Thus, the Examiner's rejection ignores the reasoning of Ex parte Porter because the rejection is inconsistent with unrebutted Declarations which did fully address all matters criticized by the Office and which were supplied in the expectation that they would be read, examined, and carefully considered.

Thus, the Examiner's rejection ignores the reasoning of Ex parte Gray [10 USPQ2d 1922, 1928 (Bd. Pat. App. & Inter. 1989)] because there is solid evidence of operability and utility, beyond the detailed specification, in the form of corroboratory expert testimony including said unrebutted Declarations.

Thus, the Examiner's rejection ignores the reasoning of In re Morris [127 F.3d 1048, 1053-56, 44 USPQ2d 1023, 1027-30 (Fed. Cir. 1997)] because the interpretation of operability and utility is predicated upon that which one who is skilled-in-the-art would reach.

Examiner is in Violation of Office Rules, Federal Law and More

444. The Examiner's rejection is not consistent with code, statute, case law, Office rules, and The United States Constitution as it rejects the reasoning of numerous other rejections of controlling authority. The Examiner's rejection ignores the Directive of The United States Constitution [Clause 8 of Section 8, Article I] by improperly eliminating an entire field involving energy and United States security. The Examiner's rejection ignores the Directive of The United States Constitution [14th Amendment] that Applicant is entitled to an impartial tribunal [28 U.S. Code Section 144, Mayberry v. Penna., 91 S.8.; Bloom v. Illinois, 88 Ct. 499 S.Ct. 1477; Duncan v. Louisiana, 88 S.Ct.1444] and equal protection of the laws. Ignoring unrebutted Declarations and due process patently violates the 14th Amendment's "equal protection" clause [Frontiero v. Richardson, 93 S.Ct. 1736, 411 U.S. 677; Weiss v. Weiss, 436 N.Y.S. 2d. 862, 52 N.Y. 2d. 170 (1981)] with serious implications [Gass v. Lopez, 95 S. Ct 729; Wood v. Strickland, 95 S Ct 9S2: U.S. v. Price, 86 S Ct 1152, 1157, Footnote 7; Griffin v. Breckenridge, 91 S Ct 179D; Gamez v. Toledo, 42 U.S.C. §1983, and Bivens v. Six

Unknown Named Agents of Fed. Bureau of Narcotics]. The Examiner's rejection ignores the reasoning of the Supreme Court that a pro se litigant is entitled to less stringent standards [U.S. Rep, 404, 520-521 (1972)].

REASON FOR GRANTING THE PATENT - Completeness and Compliance

445. There are many ignored, unrebutted Declarations and Amicus Briefs already in the record which prove utility. Declarations are sufficient in their factual content with respect to the significant evidence, and prove that the Examiner is in clear error. By submitting said peer-reviewed publications, showing the Applicant is correct, and said Declarations containing relevant facts by probative witnesses, the Applicant has now undertaken the full burden coming forward with his evidence as required [In re Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444].

446. The Applicant has taught in the original specification and claims how the activity can be measured by a multiring calorimeter. The method and apparatus measure the activity, with controls and measurement of noise. The original specification and claims (all pending claims) taught the subject matter defined by each of the rejected claims, set forth the best mode contemplated, and distinctly point out and claim the subject matter which constitutes the invention. The original specification and claim adequately presented the claimed invention so that an artisan, or those skilled in the art, --who unlike the Board actually read the it-- could practice it without undue experimentation [In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988), citing with approval *ex parte* Forman, 230 USPQ 546, 547 (Bd. Pat. App. & Int. 1986)].

447. The invention (in structure, operation and composition) is defined by the claims and the original specification, and in this case they correctly and accurately define the invention --which is to measure the activity of a sample -- and therefore there is enablement (a question of law; In re Fouche, 439 F.2d 1237, 1243, 169 USPQ 429, 434, (CCPA 1971)). The enablement, utility, and operability are grounds of patentability [Newman v. Quigg, 877 F.2d 1575, 1581, 11 USPQ2d 1340, 1345 (Fed. Cir. 1989)]. Therefore, the original specification and claims were an adequate and enabling disclosure and complied and conformed with the Patent Act.

448. This request for reconsideration states with particularity the points of law and facts which the Examiner has overlooked or misapprehended using substantive argument and hard evidence -- already in the record. The Supreme Court has ruled that a *pro se* litigant is entitled to less stringent standards [U.S. Rep, 404, 520-521 (1972)].

REASON FOR GRANTING THE PATENT - Obstruction of Justice and HeavyWatergate by the USPTO

449. The above-entitled invention works. It does not need cold fusion. Nonetheless, cold fusion is real (and not even necessary for the technology of the above-entitled application) and the Examiner knows it, and the Board knows it. It is not fair to America that one goal may have been obstruction of justice to enable transfer of these new technologies overseas under color of Law.

Additional Arguments: THE PATENT SHOULD BE ISSUED

I

The patent should be granted for any of several reasons, including failure of the Office to comply with the authority of Article I, Section 8, Clause 8.

450. This invention, itself, may initially appear to be de minimis because it involves a holding apparatus, calorimeter (heat-measuring instrument) and method used to examine heat-generating metal samples, and then a method to maximize the heat produced. However, it is of great and compelling importance when measured by either the particular constitutional mandate of Art. I, §8, cl. 8 or the number of people dependent upon energy monitoring, efficiency and utilization, and alternative energy sources. Congress has spoken to "encourage progress" [DIAMOND v. CHAKRABARTY] and to encourage ingenuity [447 U.S. 303, 309] and has performed its constitutional role in defining patentable statutory subject matter to include "anything under the sun that is made by man." There is no doubt that would include inventions involving energy efficiency and energy and material monitoring within the meaning of the statute. The facts here show the Applicant (and Appellant in '457) DID demonstrate operability and utility of the present invention.

The original specification and claims complied and conformed with the requirements of 35 U.S.C. §112, first paragraph, and 35 U.S.C.§101 of the Patent Act. The Examiner has produced no evidence to the contrary pertaining to the original specification and claims. Therefore, the Office has not acted following Congress lead as authorized by Art. I, §8, cl. 8.

II

The patent should be granted because, as the Affiants and Amici Curiae declare, the Applicabnt has fully conformed with, and satisfied, the requirements of §101 of the Patent Act and met at least one (1) stated objective [*Standard Oil Co. (Indiana) v. Montedison, S.P.A.*, 664 F.2d 356, 375, 212 USPQ 327, 344 (3rd Cir. 1981), cert. denied, 456 U.S. 915, 102 S.Ct. 1769, 72 L.Ed.2d 174 (1982); *E.I. du Pont de Nemours & Co. v.Berkley & Co.*,620F.2d1247,1258 n.10,1260 n17,205 USPQ1,8n10,10n.17(8th Cir.1980); *Krantz and Croix v.Olin*, 148 USPQ 659, 661-62 (CCPA 1966); *Chisum on Patents*, 4.04[4] [1983]; *RAYTHEON COMPANY v. ROPER CORPORATION, U.S.C.A.*, Federal Circuit, 1983, 724 F.2d 951, 220 USPQ 592].

451. The original specification and claims teach, the present invention which includes a holding apparatus, calorimeter (heat-measuring instrument), and method used to examine heat-generating metal samples, and then a method to maximize the heat produced. It solves may long-standing problems. Applicant taught in the original specification and claims how his apparatus works and claimed the invention.

III

The patent should be granted because the Office has systematically ignored timely-submitted peer-reviewed proof of operability and enablement at the time of the initial filing [Swartz (97); A136].

452. The invention has been confirmed both in Declarations and the peer-reviewed publication [Swartz. M., 1997, "Consistency of the Biphasic Nature of Excess Enthalpy in Solid State Anomalous Phenomena with the Quasi-1-Dimensional Model of Isotope Loading into a Material" *Fusion Technology,* 31, 63-74] proving utility and operability (a question of fact). Said Declarations and the published article demonstrating the invention are objective evidence regarding utility and enablement. The rejection should logically match and demonstrate accuracy consistent with said record including the Declarations. In this case, it does not. This is not an *ex parte* case, but a case where there were multiple responses by both parties, and instead of honest reporting, fraud is being encouraged. In this Request, the inaccurate statements, facts, and evidence are clearly again laid out to give the Board an opportunity to correct the situation. **In most free countries, eleven (11) date stamps of the Patent Office is enough impeccable and undeniable evidence to demonstrate submission and receipt of said peer-reviewed publication (A136).**

IV

The patent should be granted because the Office has ignored both the standards of review and its own rules, including the standard of review which requires the Office to provide reason to doubt the objective truth of any of the Declarants' statements [Environtech Corp. v. Al George, Inc., 730 F.2d 753, 762, 221 USPQ 473, 480 (Fed. Cir. 1984)].

453. The Decision does not comport with any notion of fair play of justice. The Office has not properly followed its own standards of review regarding patentability. The unwarranted rejections for putative "lack of operability" under 35 U.S.C. §112, ¶1 and "lack of utility" under 35 U.S.C. §101 has only been made by ignoring the original specification and claims, by misdescribing the invention, by ignoring the timely-submitted unrebutted Declarations, by ignoring scores of Exhibits and references, and by ignoring the Office's own rules, thus creating an arbitrary standard of review for patentability. The putative "indefiniteness" under 35 U.S.C. §112, ¶2 has only been made by ignoring the reasoning of several decisions already in the record, ignoring the Office's own rules, and what those who were skilled-in-the-art at the time the original specification and claims were filed have stated [In re Morris, 96-1425 (Fed Cir, 18 Aug 1997)] in unrebutted Declarations [In re Marzocch (439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971)], which were timely submitted as required [In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)], and which fully addressed all matters criticized by the Office regarding matters of fact. The original specification and claims complied and conformed with the requirements of 35 U.S.C. §112, first paragraph, and 35 U.S.C.§101 of the Patent Act. The Examiner has produced no evidence to the contrary pertaining to the original specification and claims of the above entitled application.

V

The patent should be granted because the Office has disingenuously relied upon reference to art cut of a cloth other than the above-entitled specification and claims. Thus, the Office's position is weak -- which should dictate allowance of the present invention.

454. By contrast, the present invention has significant utility. Energy needs dominate the economy and welfare of humanity. Claims 1-20 (all pending claims) clearly define subject matter of considerable utility, and Applicant has conformed with the requirements of §101 of the Patent Act. Improving the activity of energy production has utility because it is convincing to one of ordinary skill in the art and Applicant has submitted several Declarations saying the teachings have utility as an invention to measure activity. The Examiner is entitled to his opinion but not to the Facts or to some

presumed right to violate US law and the US Constitution in his attempt to subvert said Invention, its specification, subject matter, and claims which meets all said requirements.

SUMMARY

455. The Office should issue the patent because Appellant taught in the original specification and claims how his apparatus works and claimed the invention. Appellant thereafter has made a diligent effort to amend the claims of this application so that the claims define a novel structure which is also submitted to render said claimed structure unobvious because it produces new and unexpected results.

456. The Office should issue the patent because Appellant has herein demonstrated that any combination of Westfall or Kinsella and Edwards, Sadoway, Van Noorden, Dufour, Cedzynska, or Edwards and/or the other cited art is an improper one, absent any showing in the references themselves that they can or should be so combined, and that neither of the references appears to suggest, or allude to, or teach a structure as defined by the teachings of the original specification of the above-entitled application or claimed by Claims 1, 10, 11, 21, 22, and 24-30. Appellant has explained in detail (supra) how the other cited art are different and therefore produce a different result from the present invention. The figures and claims of Westfall or Kinsella and Edwards, Sadoway, Van Noorden, Dufour, Cedzynska, or Edwards and the other cited art are intended to, and do, serve a different purpose than does the structure defined by the claims, and each of the cited art adds nothing of substance. None of the cited references shows a method to control the production of heat or nuclear product which includes in combination loading an isotopic fuel into a material by an applied electric field, and then at a later point in time applying a second applied electric field to redistribute said isotopic fuel within said material, means to control the distribution of the loaded isotopic fuel within the material, means including barriers impermeable to the flow of said isotopic fuel within said material as the Examiner purports.

457. The Office should issue the patent because Appellant has given lists of additional critical features and components which distinguish Applicant's invention to operatively function in a different manner compared to said cited art.

458. The Office should issue the patent because the The US Patent Office has ignored the US Constitution and US security and US citizens' civil rights to withhold reasonable cold fusion patents even though "(m)ost patent applications submitted to the

U.S. Patent and Trademark Office are approved". And they are, including astrology patents to predict lottery numbers. The Office's systematic discrimination and warfare upon the inventive American citizenry (more than just the Appellant) for more than two decades speaks indelibly for itself. The Office is in breach of its responsibility, and the aegis of authority granted to it by Congress under the United States Constitution.

461. The Office should issue the patent because the Appellant notes that the U.S. Supreme Court has ruled that any *pro se* litigant is entitled to less stringent standards [U.S. Rep volume 404, pages 520-521 (72)].

462. The Examiner has been shown to be wrong in his rejection of Claims 1, 10, 11, 21, 22, and 24-30 (all claims) under 35 U.S.C. 112, based upon flawed reference to other art ("FP" or "F+P") rather then the present invention, as failing to comply with the enablement requirement

The Examiner has been shown to be wrong in his rejection of Claims 1, 5-8, 10-14 and 21-30 are rejected under 35 U.S.C. 102(b) as being anticipated byWestfall (U.S. 5,215, 631),

The Examiner has been shown to be wrong in his rejection of Claims 1, 10, 11, 21, 22, and 24-30 are rejected under35 U.S.C. 102(b) as being anticipated by Kinsella et al.(U.S. 3,682,806),

The Examiner has been shown to be wrong in his rejection of Claims 8 and 13 rejected under35 U.S.C. 103(a) as being unpatentable over Cedzynska et al. in view of Wesffall, as applied to claims 1, 5-7, 10-12, 14 and 21-30 above, and further in view of anyone of Edwards, Sadoway (WO 91/06959) or Van Noorden (NL 8909-962-A) or Dufour (WO 91/01036).

The Examiner has been shown to be wrong in his rejection of Claims 1, 5-7, 10-12, 14 and 21-30 are rejected under35 U.S.C. 103(a) as being unpatentable over either one of Cedzynska et al. (WO 93/01601) or Edwards (WO 90/1541 6) in view of Westfall.

The Examiner has been shown to be wrong in his rejection of Claims 1, 10, 11, 21, 22, and 24-30 rejected under 35 U.S.C. 101 by the Examiner, based upon flawed reference to other art ("FP" or "F+P") rather then the present invention, as is just and reasonable.

WHEREFORE for the above reasons, including the timely-submitted Declarations and peer-reviewed published papers, listed on the Forms 1440, which completely refute the Office, together proving validation both *de jure* and *de facto*,

including that the Office's rejection has been based upon disingenuous statements and a flawed notion, and including that the Office's rejection has focused on cloth cut of other art,

the Appellant respectfully requests reversal of the Examiner's rejections and allowance of all claims.

Simply put, all claims do not suffer from any justified rejection at this time, and should be allowed to mature into a patent.

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §112 because the claimed invention is operative.

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §112 pursuant to the Standards of Review involving testimony of declarants skilled-in-the-art.

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §112 pursuant to the Standards of Review involving peer-reviewed publications.

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §112 in the disingenuous claim by the Office states, that the present invention resides, in a "non-existent field".

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §112 (second paragraph) because the claimed invention is operative and clearly claimed.

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §112 (second paragraph) pursuant to the Standards of Review involving testimony of declarants skilled-in-the-art.

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §112 (second paragraph) pursuant to the Standards of Review involving peer-reviewed publications.

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §102 because the subject matter sought to be patented as defined by claims 1, 5-8, 10-14, 21-30 is novel.

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §103 because the subject matter sought to be patented as defined by claims 1, 5-8, 10-14, 21-30 is non-obvious.

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §101 because the claimed invention is operative and therefore has utility.

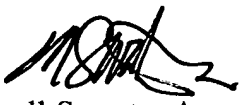
The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §101 pursuant to the Standards of Review involving testimony of declarants skilled-in-the-art.

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §101 pursuant to the Standards of Review involving peer-reviewed publications.

The evidence shows Claims 1, 5-8, 10-14, 21-30 are patentable under U.S.C. §101 pursuant to the Standards of Review involving reading of the claims.

The Board should, in the alternative, issue an Order compelling the Office to substantively respond to said Declarations discussing operability and utility, including Appellant's [then Applicant's] Declarations submitted 11/4/02, 3/24/03, and 4/30/03, an explanation (rather than condoning by further inaction) the removal of submitted peer reviewed articles from the file folder again combined with bad behavior against the Appellant (then Applicant, too) to obstruct justice and deny the United States of America access to an invention of energy production which is clean and efficient. The Order should include sanctions against the Examiners for adding new material after Final, and for withholding the Appeal Briefs since 2004, for failing to cite all Appeal Briefs of Appellant in the Office's Brief while withholding other Appeal Briefs, for failing to address Appellant's (then Applicant's) Declarations and peer-reviewed publications, all the while actually continuing to issue US Patents dealing with astrology while obstructing the above-entitled application which is a member of a group dealing with ultraclean, extremely efficient, energy production previously made SPECIAL by the Board of Patent Appeals.

Respectfully submitted,



Mitchell Swartz, Appellant, *pro se*
Weston, MA

CERTIFICATE OF MAILING [37 CFR 1.8(a)]

August 26, 2011

To Whom it Does Concern:
I hereby certify that this correspondence will be deposited with the United States Postal Service by First Class Mail, postage prepaid, in an envelope addressed to

"Office of the Clerk
Board of Patent Appeals and Interferences
Box 1450
Alexandria, VA 22313-1450" on the date below.

Thank you.

Sincerely,

August 26, 2011

M.R. Swartz
Weston, MA 02493

Defense Intelligence Agency

Defense Analysis Report

"G"

DIA-08-0911-003 **13 November 2009**

Technology Forecast: Worldwide Research on Low-Energy Nuclear Reactions Increasing and Gaining Acceptance

Scientists worldwide have been quietly investigating low-energy nuclear reactions (LENR) for the past 20 years. Researchers in this controversial field are now claiming paradigm-shifting results, including generation of large amounts of excess heat, nuclear activity and transmutation of elements.[1,2,3] Although no current theory exists to explain all the reported phenomena, some scientists now believe quantum-level nuclear reactions may be occurring. DIA assesses with high confidence that if LENR can produce nuclear-origin energy at room temperatures, this disruptive technology could revolutionize energy production and storage, since nuclear reactions release millions of times more energy per unit mass than do any known chemical fuel.[4,5]

Background

In 1989, Martin Fleischmann and Stanley Pons announced that their electrochemical experiments had produced excess energy under standard temperature and pressure conditions.[6] Because they could not explain this physical phenomenon based on known chemical reactions, they suggested the excess heat could be nuclear in origin. However, their experiments did not show the radiation or radioactivity expected from a nuclear reaction. Many researchers attempted to replicate the results and failed. As a result, the physics community disparaged their work as lacking credibility, and the press mistakenly dubbed it "cold fusion." Related research also suffered from the negative publicity of cold fusion for the past 20 years, but many scientists believed something important was occurring and continued their research with little or no visibility. For years, scientists were intrigued by the possibility of producing large amounts of clean energy through LENR, and now this research has begun to be accepted in the scientific community as reproducible and legitimate.

Source Summary Statement

This assessment is based on analysis of a wide body of intelligence reporting, most of which is open source information including scientific briefings, peer-reviewed technical journals, international scientific conference proceedings, interviews with scientific experts and technical media. While there is little classified data on this topic due to the S&T nature of the information and the lack of collection, DIA judges that these open sources generally provide the most reliable intelligence available on this topic. The information in this report has been corroborated and reviewed by U.S. technology experts who are familiar with the data and the international scientists involved in this work.

Although much skepticism remains, LENR programs are receiving increased support worldwide, including state sponsorship and funding from major corporations.[7,8,9,10] DIA assesses that Japan and Italy are leaders in the field, although Russia, China, Israel, and India[11] are devoting significant resources to this work in the hope of finding a new clean

energy source. Scientists worldwide have been reporting anomalous excess heat production, as well as evidence of nuclear particles[12, 13, 14] and transmutation.[15, 16, 17]

- Y. Iwamura[18] at Japan's Mitsubishi Heavy Industries first detected transmutation of elements when permeating deuterium through palladium metal in 2002.

- Researchers led by Y. Arata at Osaka University in Japan[19] and a team led by V.Violante at ENEA in Italy (the Italian National Agency for New Technologies, Energy, and the Environment—the equivalent to the U.S. Department of Energy)[20] also made transmutation claims.

- Additional indications of transmutation have been reported in China, Russia, France, Ukraine, and the United States.[21, 22]

- Researchers in Japan, Italy, Israel, and the United States have all reported detecting evidence of nuclear particle emissions.[23, 24]

- Chinese researchers described LENR experiments in 1991 that generated so much heat that they caused an explosion that was not believed to be chemical in origin.[25]

- Japanese, French, and U.S. scientists also have reported rapid, high-energy LENR releases leading to laboratory explosions, according to scientific journal articles from 1992 to 2009.[26, 27]

- Israeli scientists reported in 2008 that they have applied pulsating electrical currents to their LENR experiments to increase the excess energy production.[28]

- As of January 2008, India was reportedly considering restarting its LENR program after 14 years of dormancy.[29]

U.S. LENR researchers also have reported results that support the phenomena of anomalous heat, nuclear particle production, and transmutation.[30, 31, 32]

- At the March 2009 American Chemical Society annual meeting, researchers at U.S. Navy SPAWAR Pacific reported excess energy,[33] nuclear particles,[34] and transmutation,[35, 36] stating that these effects were probably the result of nuclear reactions.[37]

- A research team at the U.S. company SRI International has been studying the electrochemistry and kinetics of LENR since the early 1990's, reporting excess heat and helium production.[38]

- In May 2002, researchers at JET Thermal in Massachusetts reported excess heat and optimal operating points for LENR manifolds.[39]

- Researchers at the China Lake Naval Air Warfare Center in California first reported anomalous power correlated with Helium-4 production in 1996.[40]

Although no one theory currently exists to explain all the observed LENR phenomena, some scientists now believe these nuclear reactions may be small-scale deuterium fusion occurring in a palladium metal lattice.[41, 42, 43] Some others still believe the heat evolution can be explained by non-nuclear means. Another possibility is that LENR may involve an intricate combination of fusion and fission triggered by unique chemical and physical configurations on a nanoscale level.[44, 45] **This body of research has produced evidence that nuclear reactions may be occurring under conditions not previously believed possible.** Recent results suggest these anomalous LENR phenomena can be triggered by various energetic stimuli (electric and magnetic fields, acoustic waves, infrared, lasers)[46, 47] and may have a variety of operational modes.

Nuclear Fusion

Nuclear fusion as currently understood occurs only in the core of stars, in nuclear weapons, in high temperature plasmas, or in inertially confined high-energy collisions. Scientists for years have attempted to harness nuclear fusion through high-temperature plasma techniques but have been unable to produce more energy output than supplied. Fusion was once thought to be the answer to the world's future clean energy needs, but after 60 years of research still has yet to live up to this promise. "Hot" fusion researchers do not believe fusion can occur at near-room temperatures based on the Coulomb barrier that repels like nuclear charges and have dismissed much of the "cold fusion" research conducted since 1989. As a result, such research has received limited funding and support over the past 20 years.

Potential Applications of LENR: The Technology Surprise Factor

LENR's potential as a future clean energy source is still unknown. However, recent results indicating nuclear activity and transmutation are intriguing and pose the following questions:

- If the excess heat from these experiments could be captured and intensified, could LENR be used as a power source for engines, batteries, or other equipment?

- If nuclear particles could be generated and transmute elements, could LENR be used to mitigate hazardous waste or to neutralize weapons of mass destruction?[48]

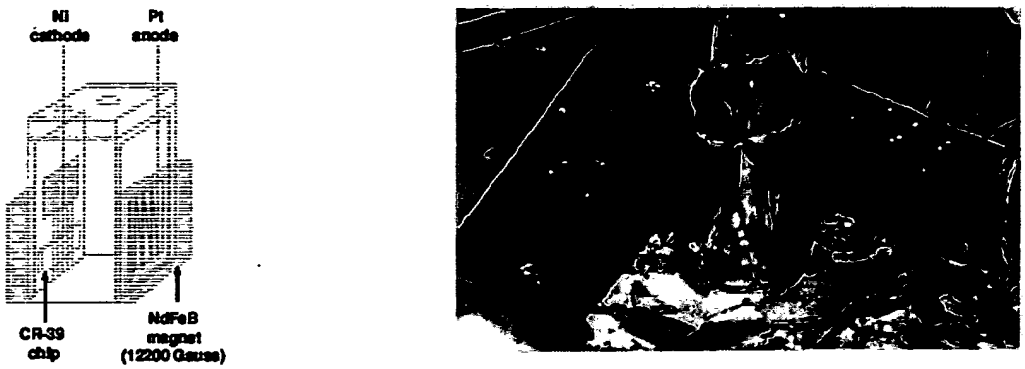
- If the various modes of energy production could be identified and optimized, could LENR be used to create designer materials or critical resources that are in short supply or serve as a tailored, "dial-a-mode" power source?

- If rapid, explosive energy output can occur in one or several modes, could LENR serve as a new high-energy-density explosive?

International LENR research was highlighted in April 2009 on a U.S. television program focused on the 20th anniversary of the Fleischman and Pons announcement.[49] Many U.S. researchers are collaborating with foreign scientists, but each team has proprietary aspects of their experiments that are not shared. Because some peer-reviewed journals are reluctant to review or publish LENR data due to past controversies, most results are presented at international conferences, and foreign scientists have access to much of the U.S. data. In addition, U.S. experts have been invited to brief on LENR to nuclear institutes in India,[50] Belgium,[51] and South Korea,[52] and a reciprocal visit by South Koreans to SPAWAR Pacific to initiate collaboration is planned. This relatively free flow of information increases the likelihood of a technology breakthrough—as well as the potential for technology surprise—by an international team, especially those from countries that are devoting more resources to this research than is the United States, and are supported with major corporate funding (Mitsubishi, Toyota, and Honda in Japan; Pirelli in Italy).[53]

The Experiments

Most LENR experiments involve electrodes immersed in solutions of metal salts such as lithium chloride or lithium sulfate, with heavy water substituted for natural water. Electric current is sent through the experimental apparatus, in most instances producing excess heat. This effect occurs over long periods (several hundreds of hours), and many early experimenters achieved negative results because they were unaware of this incubation period. Israeli researchers used pulsating electric fields to increase heat production. The application of magnetic fields has been shown to stimulate increased heat and power. Usually one of the electrodes is palladium, because it has a high ability to adsorb (hold on the surface) and absorb deuterium atoms in its metal matrix. Deuterium is an isotope of hydrogen that undergoes fusion in nuclear weapons at high temperatures and pressures; it also undergoes fusion and is one of the basic building blocks of the heavier elements formed in stars. The Navy SPAWAR experiments used a unique technique to place the palladium atoms in the heavy-water solution and to codeposit palladium and deuterium, which rapidly increases the deuterium "loading" necessary for the LENR phenomena to occur.



A Notional LENR Electrochemical Cell (Left) and a French LENR Apparatus After an Unexplained Explosion (Right)[54]

Who's Hot in Cold Fusion?

The countries with the most advanced LENR programs are Japan, Italy, and Israel. In addition, Russia, France, China, South Korea, and India are spending significant resources on LENR research. The following are among the most notable efforts:

- In Japan, Iwamura at Mitsubishi has been studying transmutation of elements in LENR experiments and multilayer palladium (Pd) complexes. His team includes the Japanese Synchrotron Radiation Research Institute and SPring-8 at Riken. Kitamura and other researchers at Kobe University are investigating Pd nanopowders and Helium-4 ash. Arata at Mitsubishi Heavy Industries has worked on catalysts containing nanopalladium. Yamaguchi at Kobe noted transmutation using multilayered Pd samples. Mizuno at Hokkaido is studying transmutations and heat generation. A team led by Hioki at Toyota is investigating deuterium gas permeation through Pd as well as transmutations. Toriyabe at Tohoku University is developing charged-particle detectors for LENR. Kasagi is looking at electron and ionic screening in LENR effects.

- Vittorio Violante, a leader in the field of Pd metallurgy and the role of surface effects in LENR, heads a team at ENEA, Frascati Rome, (the Italian equivalent to the U.S. Department of Energy) performing LENR experiments. A team led by Francesco Celani at INFN that includes STMicroelectronics and Pirelli labs is studying deuterium migration in nanocoated Pd for fast-loading and anomalous heat effects. The Italian Physical and Chemical Societies are supporting LENR research in Italy.

- Srinivasan in India noted that India is restarting its LENR program; the Bhabha Atomic Research Centre had several groups working on LENR from 1989 to the early 1990s. Sinha at IISc in Bangalore is studying models for fusion in metal deuterides. Lakshmanan at Saveetha College is exploring fusion in sodium metal solutions.

- Andrei Lipson and other researchers at the Russian Academy of Sciences and scientists in Tomsk are studying the emission of charged particles during the use of electron beams to excite palladium/deuterium (Pd/D) and titanium/deuterium (Ti/D) targets. Karabut and others at LUCH also are conducting LENR experiments. A Dubna team led by Gareev is studying nuclear fusion during cavitation and molecular transitions. LUCH's Savvatimova, Dash, Muromtsev, and Artamonov also are conducting LENR experiments. Adamenko and Vysotskii of Kiev are looking for magnetic monopoles in LENR experiments. Kurchatov-based scientist Goryachev is investigating LENR for alternative energy sources and for mitigating radioactive waste.

- Xing Z. Li at Tshinghua University claims 20 institutions in China are investigating LENR with governmental support. Tian's team at Cahnchun University of Science and Technology is investigating laser triggering in Pd/D systems. Zhang and other researchers at the Chinese Academy of Sciences have studied Pd-D kinetics in LENR since 1991.

- Israeli scientists at Energetics in Omer have shown that variations in energy output can be increased using variable frequency or pulsed "superwaves" to stimulate LENR effects.

- The French Atomic Energy Agency had an official LENR program from 1997 to 1999. EDF also had one for several years. Currently, Jean-Paul Biberian from the Universite Marseille and Jacques Dufour at CNAM are working on LENR in France.

- Jan Marwan of Dr. Marwan Chemie in Berlin, Germany, is studying the nanostructure of palladium hydride systems. Huke and others from the Technische Universitat Berlin are working with Czerski in Poland and Ruprecht in Canada on electron screening mechanisms for deuteron fusion.

Outlook and Implications

If nuclear reactions in LENR experiments are real and controllable, DIA assesses that whoever produces the first commercialized LENR power source could revolutionize energy production and storage for the future. The potential applications of this phenomenon, if commercialized, are unlimited. The anomalous LENR effects seen in these metal lattices containing deuterium may also have as-yet undetermined nanotechnology implications. LENR could serve as a power source for batteries that could last for decades, providing power for electricity, sensors, military operations, and other applications in remote areas, including space. LENR could also have medical applications for disease treatment, pacemakers, or other equipment. Because nuclear fusion releases **10 million times more energy per unit mass** than does liquid transportation fuel, the military potential of such high-energy-density power sources is enormous. And since the U.S. military is the largest user of liquid fuel for transportation, LENR power sources could produce the greatest transformation of the battlefield for U.S. forces since the transition from horsepower to gasoline power.

Prepared by: Beverly Barnhart, DIA/DI, Defense Warning Office. With contributions from: Dr. Patrick McDaniel, University of New Mexico; Dr. Pam Mosier-Boss, U.S. Navy SPAWAR/Pacific; Dr. Michael McKubre, SRI International; Mr. Lawrence Forsley, JWK International; and Dr. Louis DeChiaro, NSWC/Dahlgren.

Coordinated with DIA/DRI, CPT, DWO, DOE/IN, US Navy SPAWAR/Pacific and U.S. NSWC/Dahlgren, VA.

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Mitchell R. Swartz, ScD, MD, EE
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PALABRICA, RICARDO J	

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Notice of References Cited

(Note: References listed on this & succeeding pages (3-12) have been provided to the Applicant in Office action for ~~S/N 09/748,691~~ or ~~S/N 09/968,726~~)

Application/Control No.	Ap Re SV
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Rick Palabrica	36

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE

FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS LATION

OTHER ART (including Author, Title, Date, Pertinent Pages, Etc.)		
	AR	IWAMURA, DETECTION OF ANOMALOUS ELEMENTS, X-RAY AND EXCESS HEAT INDUCED BY CONTINUOUS DIFFUSION OF DEUTERIUM THROUGH MULTI-LAYER CATHODE (Pd/CaO/Pd), Proc-ICCF-7 p. 167.
	AS	J. Kasagi, ANOMALOUSLY ENHANCED D(d,p)T REACTION IN Pd AND PdO OBSERVED AT VERY LOW BOMBARDING ENERGIES, Proc-ICCF-7
	AT	Kelly, Low-Energy Nuclear Reactions of Protons in Host Metals at Picometre Distance, TRANS. AMERICAN NUCLEAR SOCIETY,(2000)
	AU	Keeney, Jones, Evidence of Neutron Emissions from Fusion at Low Temperatures, APS & COLD FUSION TIMES, Volume 10, Number 1, 2003
	AV	Kenny, Schultz, Hyper Gentle Fusion and Isotope Production, TRANS. AMERICAN NUCLEAR SOCIETY, (2000)
	AX	Li, Resonant Tunneling in Low-Energy Nuclear Reactions, TRANS. AMERICAN NUCLEAR SOCIETY, (2000)
	AY	Lonchampt, Reproduction of Fleischmann and Pons Experiments. Proc-ICCF-6.
	AZ	Lonchampt, EXCESS HEAT MEASUREMENT WITH PONS AND FLEISCHMANN TYPE CELLS, Proc-ICCF-7 p. 202.

EXAMINER: Examiner: Palabrica, R.J.	**DATE CONSIDERED**

EXAMIsNER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of form with next communication to applicant.

FORM PTO-1440 (modified) **LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT**	ATTY DOCKET NO. 691-Series II	SERIAL NO. Serial no. 09/748,691
	APPLICANT: Dr. Mitchell Swartz	
	FILING DATE: Filed: 12/26/2000	GROUP: 3641

REFERENCE DESIGNATION				**U.S. PATENT DOCUMENTS**			
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE

FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS LATION

OTHER ART (including Author, Title, Date, Pertinent Pages, Etc.)		
	AR	Mallove, Preface and Prologue to the book Fire From Ice: Searching for the Truth Behind the Cold Fusion Furor 1991
	AS	Matsumoto, Generating Carbon Tubes and Films from Lead and Cadmium Wires During Underwater Spark Discharges, TRANS. AMERICAN NUCLEAR SOCIETY, (2000)
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	AX	McKubre, CLOSING COMMENTS SUMMARIZING THE STATUS AND PROGRESS OF EXPERIMENTAL STUDIES, Proc-ICCF-9 2002
	AY	McKubre, ,The Emergence of a Coherent Explanation for Anomalies Observed in D/Pd and H/Pd System: Evidence for 4He and 3He Production. Proc-ICCF-8 2000.
	AZ	Melich, Hansen, Pd/D CALORIMETRY - THE KEY TO THE F/P EFFECT AND A CHALLENGE TO SCIENCE, Transactions of FusionTechnology, Vol. 26, Number 4T, Part 2, December 1994: p. 355.

EXAMINER: Examiner: Palabrica, R.J.	**DATE CONSIDERED**

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OTHER ART (including Author, Title, Date, Pertinent Pages, Etc.)		
	AR	Melich, Michael E., Wilford N. Hansen, Back to the Future The Fleischmann-Pons Effect (1994)
	AS	MILES, BUSH, Calorimetric Principles and Problems in Pd-D2O Electrolysis, Proc-ICCF-3 1991. Nagoya, Japan:, Universal Academy Press, Inc., Tokyo: p. 113.
	AT	Merriman, A critical Report of ILENR2, Cold Fusion Times Fall 1996
	AU	Miles, Szpak, THERMAL BEHAVIOR OF POLARIZED Pd/D ELECTRODES PREPARED BY CO-DEPOSITION, Proc-ICCF-9 2002.
	AV	Miles, Reply to Jones, Physical Chemistry B, 102, 3642
	AX	Miles, Imam, Fleischmann, Excess Heat and Helium Production in the Palladium-Boron System, TRANS. AMERICAN NUCLEAR SOCIETY, (2000)
	AY	Miles, M. B.F. Bush, Radiation Measurements at China Lake: Real or Artifacts?, Proc-ICCF-7 1998
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EXAMINER: Examiner: Palabrica, R.J.	**DATE CONSIDERED**

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OTHER ART (including Author, Title, Date, Pertinent Pages, Etc.)		
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	AS	Miles, THE ELEVATION OF BOILING POINTS IN H2O AND D2O ELECTROLYTES, The Ninth International Conference on Cold Fusion. 2002. Beijing, China: Tsinghua University.
	AT	Miley, Some Personal Reflections on Scientific Ethics and the Cold Fusion "Episode", Accountability in Research, 2000. 8: p. 121
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	AV	Miley, On the Reaction Product and Heat Correlation for LENRs, 8th International Conference on Cold Fusion. 2000. Lerici (La Spezia), Italy: Italian Physical Society, Bologna, Italy.
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	AY	MIZUNO, Confirmation of heat generation and anomalous element caused
	AZ	Mizuno, Neutronics, Heat and Products Induced by Plasma Electrolysis, TRANS. AMERICAN NUCLEAR SOCIETY, (2000)
EXAMINER: Examiner: Palabrica, R.J.		**DATE CONSIDERED**

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OTHER ART (including Author, Title, Date, Pertinent Pages, Etc.)		
	AR	Mizuno, Experimental Confirmation of the Nuclear Reaction at Low Energy Caused by Electrolysis in the Electrolyte, Proceedings ymposium on Advanced Research in Energy Technology 2000, pp. 95-106.
	AS	Mizuno, Anomalous Isotopic Distribution after electrolysis, Cold Fusion Times Fall 1996
	AT	Mizuno, Tadahiko, Nuclear Transmutation: The Reality of Cold Fusion, Department of Nuclear Engineering Hokkaido National University, Japan
	AU	Mizuno, Tadahiko, Tadayoshi Ohmori, Tadashi Akimoto and Akito Takahashi, Production of Heat during Plasma Electrolysis in Liquid, Jpn. J. Appl. Phys. Vol.39 (2000)
	AV	Mizuno, RELATION BETWEEN NEUTRON EVOLUTION AND DEUTERIUM PERMEATION WITH A PALLADIUM ELECTRODE, Proc-ICCF-9 2002.
	AX	ORIANI, R. A., J. C. FISHER, Generation of Nuclear Tracks during Electrolysis, Jpn. J. Appl. Phys. Vol. 41 (2002) pp. 6180–6183, Part1, No. 10, October 2002
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	AZ	Oriani, Richard A. Univ of Minnesota, John C. Fisher, Fisher, Anomalous Power Generation Produced by Stirring Water Solutions, TRANS. AMERICAN NUCLEAR SOCIETY, (2000)

EXAMINER: Examiner: Palabrica, R.J.	**DATE CONSIDERED**

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS LATION
OTHER ART (including Author, Title, Date, Pertinent Pages, Etc.)							
	AR			Passell, T.O., Radiation data reported by Wolf at Texas A&M as transmitted by T. Passell. 1995, EPRI.			
	AS			Pons, S., HEAT AFTER DEATH, Transactions of Fusion Technology, Vol. 26, Number 4T, Part 2, December 1994: p. 87.			
	AT			Rothwell, ILENR2 Summary, Cold Fusion Times Fall 1996			
	AU			Savvatimova, Reproducibility of Experiments in Glow Discharge and Processes Accompanying Deuterium ions Bombardment.Proc-ICCF-8 (2000)			
	AV			Schwinger, Julian, Transactions of Fusion Technology, Vol. 26, Number 4T, Part 2, December 1994			
	AX			Sinha, K. P. P. L. Hagelstein, MIT, Electron Screening in Metal Deuterides, TRANS. AMERICAN NUCLEAR SOCIETY, (2000)			
	AY			Storms, Edmund, COLD FUSION: An Objective Assessment			
	AZ			Storms, Edmund, Ways to Initiate a Nuclear Reaction in Solid Environments, American Physical Society Meeting, March 15, 2001			
EXAMINER: Examiner: Palabrica, R.J.				**DATE CONSIDERED**			

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS LATION
OTHER ART (including Author, Title, Date, Pertinent Pages, Etc.)							
	AR			Storms, RELATIONSHIP BETWEEN OPEN-CIRCUIT-VOLTAGE AND HEAT PRODUCTION IN A PONS-FLEISCHMANN CELL, (ICCF-7). p.356.			
	AS			Storms, A Critical Evaluation of the Pons-Fleischmann Effect (Part 1),Infinite Energy 6, #31 (2000) 10			
	AT			Storms, The Nature of the Nuclear-Active-Environment Required for Low Energy Nuclear Reactions, Preprint to Infinite Energy, July 2002			
	AU			Storms, EXCESS POWER PRODUCTION FROM PLATINUM CATHODES USING THE PONS-FLEISCHMANN EFFECT			
	AV			Swartz, Engineering to Control Noise, Loading, and Optimal Operating Points, TRANS. AMERICAN NUCLEAR SOCIETY, (2000)			
	AX			Swartz, Mitchell Patterns of Success			
	AY			Szpak, S., P.A. Mosier-Boss, ON THE BEHAVIOR OF THE CATHODICALLY POLARIZED PD/D SYSTEM: SEARCH FOR EMANATING RADIATION			
	AZ			Szpak, S., P.A. Mosier–Boss,1 and R.D. Boss, ON THE BEHAVIOR OF THE PD/D SYSTEM: EVIDENCE FOR TRITIUM PRODUCTION			
EXAMINER: Examiner: Palabrica, R.J.				**DATE CONSIDERED**			

EXAMIsNER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of form with next communication to applicant.

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	APPLICANT: Dr. Mitchell Swartz	
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS LATION

OTHER ART (including Author, Title, Date, Pertinent Pages, Etc.)										
	AR									Szpak, S. P. A. Mosier–Boss, TECHNICAL REPORT 1862, February 2002, Thermal and Nuclear Aspects of the Pd/D20 System; Volume 1
	AS									Takahashi, Radiation-Less Fission Products by Selective Channel Low-Energy Photofission, TRANS. AMERICAN NUCLEAR SOCIETY, (2000)
	AT									UCHIKAWA, New Technique of Activating Palladium Surface for Absorption of Hydrogen or Deuterium, Jpn. J. Appl. Phys. Vol. 32 (1993) pp. 5095-5096 Part 1, No. 11 A, November 1993
	AU									US Navy, Final Report Abstract Anomalous Effects in Deuterated Systems 9/1995
	AV									Violante, Recent Results from Collaborative Research at ENEA-Frascati on Reaction Phenomena in Solids, TRANS. AMERICAN NUCLEAR SOCIETY, (2000)
	AX									Will, TRITIUM GENERATION IN PALLADIUM CATHODES WITH HIGH DEUTERIUM LOADING, Transactions of Fusion Technology, Vol. 26, Number 4T, Part 2, December 1994: p. 209.
	AY									WWII Japanese CF Rocket Plane, Cold Fusion Times Fall 1997
	AZ									

EXAMINER: Examiner: Palabrica, R.J.	**DATE CONSIDERED**

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FORM PTO-1440 (modified) **LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT**	ATTY DOCKET NO. 691-Series II	SERIAL NO. Serial no. 09/748,691
	APPLICANT: Dr. Mitchell Swartz	
	FILING DATE: Filed: 12/26/2000	GROUP: 3641

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS LATION
	AC						
	AD						

OTHER ART (including Author, Title, Date, Pertinent Pages, Etc.)		
	AR	Petition for Writ of Certiorari Applicant vs. Q. Todd Dickinson 2/2003
	AS	Letter to Dagani from Dr. Miles, 5/20/98 regarding issues cited by Office
	AT	Letter to the Dr.Morrison, 7/23/96 regarding issues cited by Office
	AU	Letter to Dr. Miller, 9/24/97 regarding issues cited by Office
	AV	Letter to Mr. Murray, 3/7/98 regarding issues cited by Office
	AX	
	AY	
	AZ	

EXAMINER: Examiner: Palabrica, R.J.	**DATE CONSIDERED**

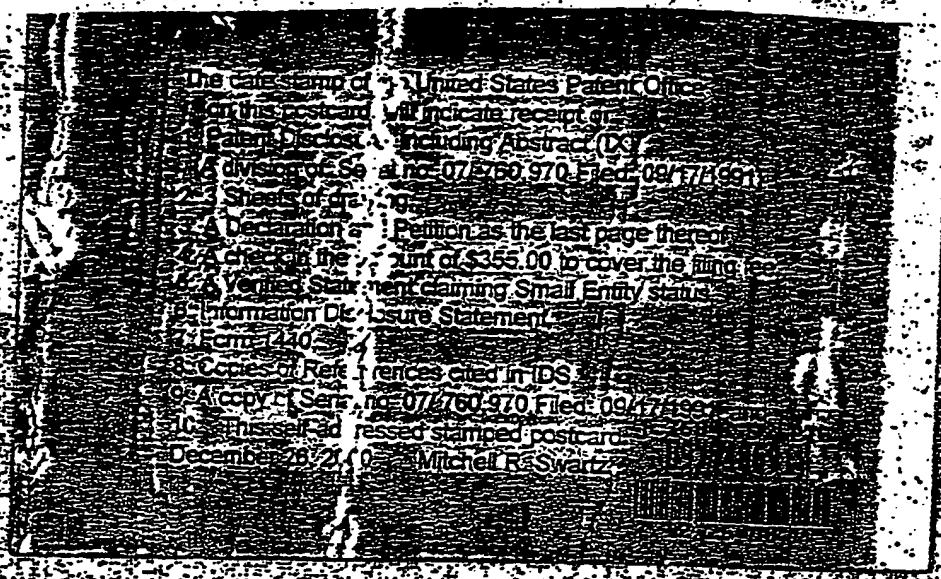
EXAMIsNER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of form with next communication to applicant.

EXHIBIT "E"

"E"

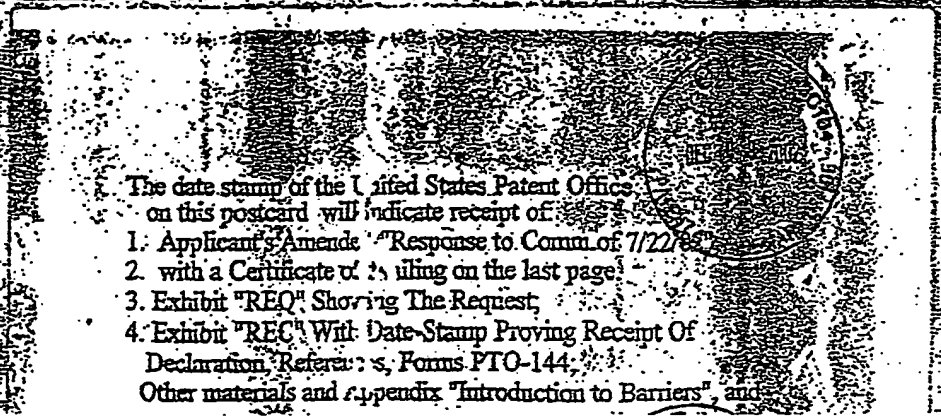
APPENDIX C

The self-addressed stamped postcards bearing the imprimatur of the stamp of the Patent Office's Post Office proving timely receipt of Exhibits and pleadings.



The date stamp of the United States Patent Office
on this postcard will indicate receipt of:
1. Applicant's Response to Communication of 9/5/02,
2. with a Certificate of Mailing on the last page.
3. Declaration of Dr. Mitchell R. Swartz.
4. A packet of additional Declarations.
5. Several packets of References with Forms 1440,
6. A copy of the Abstract requested by the Examiner,
7. From 970: Amendment under Rule 116 (11/2/93),
8. From 970: Reply Brief to Examiner (4/ 23/94), and
9. Appendix "Introduction to Barriers", and
10. This self-addressed stamped postcard.

S.N. 09/ 748 591 Filed: 12/26/2000
Thank you. Dr. M Swartz
Mailed: November 4, 2002



The date stamp of the United States Patent Office
on this postcard will indicate receipt of:
1. Applicant's Amended "Response to Comm. of 7/22/02",
2. with a Certificate of Mailing on the last page.
3. Exhibit "REQ" Showing The Request,
4. Exhibit "REC" With Date-Stamp Proving Receipt Of
Declaration, References, Forms PTO-144,
Other materials and Appendix "Introduction to Barriers", and

The date stamp of the United States Patent Office
on this postcard, will indicate receipt of:
1. "Response of Applicant to Office Action",
with a Certificate of mailing
on the last page thereof, and
2. Version With Markings To Show Changes Made,
3. Petition To The Commissioner Supported By A
3. Declaration of Dr. Mitchell Swartz
4. Several Packages of Exhibits Rebutting The Examiner,
5. Forms 1440 For ... Exhibits, and
6. This self-addressed stamped postcard.
S.N. 09/748,691 Filed: 12/26/2000
Thank you.
Mailed: March 24, 2003 Dr. Mitchell Swartz

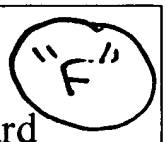
The date stamp of the United States Patent Office
on this postcard will indicate receipt of:
1. "Applicant's Response To
The Office Communication Of 4/15/03",
with a Certificate of mailing
on the last page thereof, and
2. This self-addressed stamped postcard.
S.N.09/748,691 Filed: 12/26/2000
Thank you.
Mailed: April 19, 2003 Mitchell Swartz

The date stamp of the United States Patent Office
on this postcard will indicate receipt of:

1. "Petition To The Commissioner",
with a Certificate of mailing
on the last page thereof, and
2. Declaration of Dr. Mitchell Swartz, and
3. This self-addressed stamped postcard.
S.N. 09/748,691 Filed: 12/26/2000
Thank you.
Mailed: April 19, 2003 Dr. Mitchell Swartz

Table 1 - Tablulated Response of Multiply-Submitted Peer-Reviewed Exhibit (*) to the Patent Office and the Board

[(*)Swartz. M., 1997, *Fusion Technology,* 31, 63-74]



Missive Number	Date Sent	Form of peer-reviewed article	Where Discussed Therein	Result by PTO	Result by Board	Proof of Receipt
1	3/15/95	prepublication with original specification and claims	Form 1440 Exhibit 1	"lost", as admitted by Examiner Wasil on 12/96	ignored	Postcard, Stamp of PTO (not shown)
2	3/12/97	replacement with post-publication copy Sent to Examiner Wasil (see also Exhibit 6)	In letter, and in Response in Averments 6,7 discussed on pages 50-51, Also Form 1440 Exhibit 2	"lost", as admitted by Examiner Wasil in telephone call "typically left in" [4/17/97 at 3 PM]	ignored	Postcard, Stamp of PTO in Exhibit 3
3	5/26/97	Second Replacement copy of post-publication article	In Response on pages 2, 3, Also Form 1440	"Lost"	ignored	Postcard, Stamp of PTO in Exhibit 4
4	9/16/97	Third, Fourth, Fifth Replacement copies of article send to Board As part of Appendix	Discussed in Appeal Brief including on pages 47, 57	"lost" with entire Appendix, admitted by the Examiner	ignored	Postcard, Stamp of PTO in Exhibit 5
5	11/08/07	Sixth, Seventh, Eight Replacement copies of article send to Board As part of Appendix	Discussed in Retyped Appeal Brief including on pages 47, 57	"lost" with entire Appendix, admitted by the Examiner	ignored	Postcard, Stamp of PTO in Exhibit 7
6	11/27/97	Ninth, Tenth, Eleventh Replacement copies of article sent to Board, One in Each Brief -Triplicate	As part of Appendix	Ignored by the Board	ignored	Postcard, Stamp of PTO (not shown)
7	6/25/98	Twelfth, Thirteen, and Fourteenth Replacement copies of article Included with Reply Brief which also contained followup articles, One in Each Reply Brief in Triplicate	Discussed in Reply Brief including on pages 1-4 with respect to systematically missing documents.	Ignored by the Board	ignored	Postcard, Stamp of PTO in Exhibit 8

RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 3641

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For: METHOD TO CONTROL REACTIONS
INVOLVING ISOTOPIC FUEL
WITHIN A MATERIAL USING
ORTHOGONAL ELECTRIC-FIELDS
Serial no. 09/ 748,691
Filed: 12/26/2000
This is a division of Serial no. 07/ 760,970
Filed: 09/17/1991

Group Art Unit: 3641
Examiner: Palabrica, R.J.

November 24, 2003

Office of the Clerk
Board Of Patent Appeals
c/o The Commissioner for Patents
Alexandria, VA 22313-1450

Appellant's Notice To The Board Of False Statements In An Office Communication Dated 11/18/03

1. This is Appellant's Response to the Office's communication dated 11/18/03 (cover as Exhibit "A", attached). Said communication is stamped and signed by Michael Carone.

2. Said office communication purports that there are errors in the Appeal Brief dated Sept. 17, 2003 of the above-entitled action. The Appellant respectfully disputes each of these. The Appellant will demonstrate that it is Mr. Carone who has made a series of egregious errors which the Appellant will forensically detail below.

3. In response to the Office's second Communication, attached hereto is Appellant's Petition to the Commissioner, Motion for Recusal and Motion for Sanctions.

4. In the following, the Communication from the office dated November 18, 2003 (Exhibit "A") will hereinafter, be referred to as the "Communication of 11/18/03" or the "second Office Communication".

Also, in the following, the Appellant will refer to his previously submitted "Notice of Compliance by Appellant" which was dated Sept. 17, 2003. Hereinafter, this will be referred to as the "Notice".

In addition, in the following, the Appellant will refer to his previously submitted (in triplicate) Appeal Brief dated Sept. 17, 2003. Hereinafter, this will be referred to as the "Appeal Brief".

Also, previously, Appellant received a communication from the office dated 8/28/03 (copy attached as exhibit "B"). Hereinafter, this will be referred to as the "Communication of 8/28/03" or the "first Office Communication".

The Office's First False Statement

5. Mr. Carone purports that there is "subject matter not found in the specification" and that the Appellant purportedly did not respond to his (nonspecific) previous citation. The Office's Communication inaccurately states,

"1. The Summary still includes subject matter not found in the specification (see item b of previous Office Action)."

The Truth - All Subject Matter Was Discussed In The Specification

The Office is wrong for at least five reasons. First, Appellant respectfully disputes this because the subject matter was discussed in the specification.

Second, Appellant respectfully disputes this because Appellant addressed this matter in the response to the Office in his "Notice of Compliance by Appellant", dated Sept. 17, 2003. For example, in said Notice, the Appellant said on page 2,

"The Office's notification (of 8/28/03) states,

"The Summary includes subject matter not found in the specification (see page 7, last three paragraphs)."

The Applicant has corrected this, and removed the citation from this section."

["Notice of Compliance by Appellant", dated Sept. 17, 2003, page 2]

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was corrected on pages 4 through 7 in the Appeal Brief, as said Notice stated on page 2. Not only was the effort of the Appellant ignored, but the Notice itself was ignored -- despite the fact that it was discussed with specificity on page 2 in said Notice of Sept. 17, 2003. Where is the Office's response? There is no honest or substantive response

by the Office, and no accountability in the Office. Instead, the Communication of 11/18/03, the second Office Communication , once again has a false statement.

Third, Appellant respectfully disputes this because each and every matter of the invention was already before the Board. The Appellant has a right to present his case and for it to be concise, clear and accurate before the Board.

Fourth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate.

Fifth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, page 2.

The Office's Second False Statement

6. The Office's Communication inaccurately states,

"2. The recitation of Issues is still improper (see item c of the previous OA)."

The Truth - The Recitation Of Issues Is Proper

The Office is wrong for at least six reasons. First, Appellant respectfully disputes this because the recitation of Issues is indeed proper.

Second, Appellant respectfully disputes this because Appellant addressed this matter in the response to the Office in his "Notice of Compliance by Appellant", dated Sept. 17, 2003. In said Notice, the Appellant said on pages 3 and 4,

"The Office's notification states,

"c. The recitation and scope of Issues is improper. MPEP 1206 states that each stated issue should correspond to a separate ground of rejection which the appellant washes the Board to review. The statement of issues should not include any argument concerning the merit of the issues. For example, a proper way of phrasing an issue is as follows: 'Whether claims 1, 5 8, 10 14 and 21 30 are unpatentable under U.S.C. 101 because the claimed invention is inoperative and therefore lacks unity." Applicant improperly includes other issues not relevant to the grounds of rejection used by the examiner, e.g., U.S. Constitution."

"The Applicant has corrected this as requested. The Applicant has removed the offending references to the " U.S. Constitution." and reserves his rights to take the Constitutional issues to the Federal Court, First Circuit by this unconstitutional action of the Office and/or Board censoring the very document which enables the Office."

The Applicant has corrected this, and removed the citation from this section."

["Notice of Compliance by Appellant", dated Sept. 17, 2003, pages 3 and 4]

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was corrected on pages 8 through 9 in the Appeal Brief, as said Notice stated on pages 3 and 4. The effort of the Appellant was ignored. The Notice was ignored -- despite the fact that it was discussed with specificity on pages 3 and 4 in said Notice of Sept. 17, 2003. Where is the Office's response? There is no honest or substantive response by the Office, and no accountability in the Office. Instead, the Communication of 11/18/03, the second Office Communication once again has a false statement.

Third, Appellant respectfully disputes this because each and every matter of the invention of which this invention is a divisional was already before the Board. The Appellant has a right to be concise, clear and accurate about what is before the Board.

Fourth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate.

Fifth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, pages 3 and 4.

Sixth, in the legal system, it is Appellant who makes notice of the Appeal - and not the Office. The Office is demanding that IT fashion the Appellant's issues. For some unknown reason, the Office now demands to control the thought, the Appeal, the issues, and the Arguments as of this date. That is unlawful and consistent with harassment, and has much more than an appearance of impropriety.

The Office's Third False Statement

7. The Office's Second Communication invents a new argument to harass the Appellant and inaccurately states,

> *"The section still contains issue not relevant to the examiner rejections. Note that the Examiner provided in the previous Office Action an example and cited the specific section in the MPEP (i.e., 1206) that discusses of how to properly phrase an Issue."*

The Truth - Every Issue Is Relevant To The Examiner Rejections

The Office is wrong for at least five reasons. First, Appellant respectfully disputes this because each and every issue is relevant to the examiner rejections.

Second, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (*vide supra, vide infra*).

Third, Appellant respectfully disputes this because each and every issue relevant to the Examiner's rejections was already before the Board previously. The Appellant has a right to be concise, clear and accurate before the Board.

Fourth, Appellant notes that this statement is a new argument, and since Appellant did not add any new issues, it cannot be true.

Fifth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, pages 3 and 4.

The Office's Fourth False Statement

8. The Office's Communication inaccurately states,

" The claimed "operability" of the invention is not a 35 U.S.C, 112, first and second paragraph issues, but a 35 U.S.C. 101 issue. "

The Truth - 35 U.S.C. 101 Involves Utility And Not Operability

The Office is wrong for at least four reasons. First, Appellant respectfully disputes this because this is nonsense. For ten years the Office has cited "operability" pursuant to 35 U.S.C, 112, first paragraph issues. All of a sudden, Mr. Carone changes the Office's previous arguments that were reasonably consistent over more than a decade in this matter. This is egregious without a clear substantive basis for the paroxysmal change.

Second, Appellant respectfully disputes this because a 35 U.S.C. 101 issue involves utility and not "operability". Appellant discussed this in detail. Attention of the Court, Board, and Commissioner is now directed to where it was discussed in detail on pages 111 through 119 in the Appeal Brief. The effort of the Appellant was ignored. Where is the Office's response? Instead, the Communication of 11/18/03, the second Office Communication once again has a false statement.

Third, Appellant respectfully disputes this because each and every matter of the invention of which this invention is a divisional was already before the Board. The Appellant has a right to be concise, clear and accurate about what is before the Board.

Fourth, Appellant respectfully disputes this purported change by the Office because this is a new argument of the Office, and should be in the Argument section of the Office's response.

The Office's Fifth False Statement

9. The Office's Communication inaccurately states,

" Notwithstanding this, the statements regarding the 35 U.S.C. 102 and 103 rejections are still improper because the specific prior art used as basis for the unpatentability determination have not been identified. "

The Truth - The Specific Prior Art Has Been Identified

The Office is wrong for at least three reasons. First, Appellant respectfully disputes this because the specific prior art was identified in the Appeal Brief.

Second, in fact, attention of the Court, Board, and Commissioner is now directed to where it was discussed on pages 72 through 100 in the Appeal Brief, and as cited in said Notice stated on page 4. The effort of the Appellant was ignored. The Notice was ignored -- despite the fact that it was discussed with specificity on page 4 in said Notice of Sept. 17, 2003. Where is the Office's response? There is no honest or substantive response by the Office, and no accountability in the Office. Instead, the Communication of 11/18/03, the second Office Communication once again has a false statement.

Third, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, page 4.

The Office's Sixth False Statement

10. The Office's Communication inaccurately states,

"3. The Grouping of Claims states that claims do not stand or fall together."

" However, there is not discussion in the Arguments section of why EACH claim is considered separately patentable."

The Truth - There Is Not Discussion In The Arguments Section Of Why Each Claim Is Considered Separately Patentable

The Office is wrong for at least seven reasons. First, Appellant respectfully disputes this because there is discussion in the Arguments section of why EACH claim is considered separately patentable.

Second, Appellant respectfully disputes this because Appellant addressed this matter in the response to the Office in his "Notice of Compliance by Appellant", dated Sept. 17, 2003. In said Notice, the Appellant said on 5,

"The Office's notification states,

"d. The statement on Grouping of Claims is improper because it includes arguments as to why certain claims do not stand or fall together. These arguments should be in the Argument section."

The Applicant has corrected this as requested."

["Notice of Compliance by Appellant", dated Sept. 17, 2003, page 5]

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was corrected on page 10 in the Appeal Brief in the ISSUES section, and then on page 11 of the Argument section for 35 U.S.C. 112 (first paragraph), and then on page 62 of the Argument section for 35 U.S.C. 112 (second paragraph), and then on page 72 of the Argument section for 35 U.S.C. 102, and then on page 90 of the Argument section for 35 U.S.C. 103, and then on page 111 of the Argument section for 35 U.S.C. 101, as said Notice stated on page 5.

The meticulous effort of the Appellant was again ignored. The Notice was ignored -- despite the fact that it was discussed with specificity on page 5 in said Notice of Sept. 17, 2003. Where is the Office's response? There is no honest or substantive response by the Office, and no accountability in the Office to this matter. Instead, the Communication of 11/18/03, the second Office Communication once again has a false statement this time ignoring pleadings in the Appeal Brief in the ISSUES section on page 10, and in the Argument section for 35 U.S.C. 112 (first paragraph) on page 11, and in the Argument section for 35 U.S.C. 112 (second paragraph) on page 62, and in the Argument sectior for 35 U.S.C. 102 on page 72, and in the Argument section for 35 U.S.C. 103 on page 90, and in the Argument section for 35 U.S.C. 101 on page 111.

Third, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (*vide supra, vide infra*).

Fourth, Appellant respectfully disputes this because each and every matter of the invention of which this invention is a divisional was already before the Board. The Appellant has a right to be concise, clear and accurate about what is before the Board.

Fifth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate.

Sixth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, page 5.

Seventh, Appellant notes that this confabulation suggests obstruction of justice under color of law by the Office.

The Office's Seventh False Statement

11. The Office's Communication inaccurately states,

"4. The Arguments section is still incomplete and improper.

The Truth - The Arguments Section Is Complete And Proper

The Office is wrong for at least five reasons. First, Appellant respectfully disputes this because the Arguments section is complete and proper.

Second, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (*vide supra, vide infra*).

Third, Appellant respectfully disputes this because it was discussed on pages 11 through 61 of the Argument section for 35 U.S.C. 112 (first paragraph), and then on pages 62 through 71 of the Argument section for 35 U.S.C. 112 (second paragraph), and then on pages 72 through 89 of the Argument section for 35 U.S.C. 102, and then on pages 90 through 110 of the Argument section for 35 U.S.C. 103, and then on pages 111 through 119 of the Argument section for 35 U.S.C. 101.

Fourth, Appellant respectfully disputes this because each and every matter of the invention of which this invention is a divisional was already before the Board. The Appellant has a right to be concise, clear and accurate about what is before the Board.

Fifth, Appellant notes that said confabulation suggests obstruction of justice under color of law by the Office.

The Office's Eighth False Statement

12. The Office's Communication inaccurately states,

"3. The Grouping of Claims states that claims do not stand or fall together."

" However, there is not discussion in the Arguments section of why EACH claim is considered separately patentable."

The Truth - There Is Not Discussion In The Arguments Section Of Why Each Claim Is Considered Separately Patentable

The Office is wrong for at least seven reasons. First, Appellant respectfully disputes this because there is discussion in the Arguments section of why EACH claim is considered separately patentable.

Second, Appellant respectfully disputes this because Appellant addressed this matter in the response to the Office in his "Notice of Compliance by Appellant", dated Sept. 17, 2003. In said Notice, the Appellant said on 5,

"The Office's notification states,

"d. The statement on Grouping of Claims is improper because it includes arguments as to why certain claims do not stand or fall together. These arguments should be in the Argument section."

The Applicant has corrected this as requested."
["Notice of Compliance by Appellant", dated Sept. 17, 2003, page 5]

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was corrected on page 10 in the Appeal Brief in the ISSUES section, and then on page 11 of the Argument section for 35 U.S.C. 112 (first paragraph), and then on page 62 of the Argument section for 35 U.S.C. 112 (second paragraph), and then on page 72 of the Argument section for 35 U.S.C. 102, and then on page 90 of the Argument section for 35 U.S.C. 103, and then on page 111 of the Argument section for 35 U.S.C. 101, as said Notice stated on page 5.

The meticulous effort of the Appellant was again ignored. The Notice was ignored -- despite the fact that it was discussed with specificity on page 5 in said Notice of Sept. 17, 2003. Where is the Office's response? There is no honest or substantive response by the Office, and no accountability in the Office. Instead, the Communication of 11/18/03, the second Office Communication once again has a false statement this time ignoring pleadings in the Appeal Brief in the ISSUES section on page 10, and in the Argument section for 35 U.S.C. 112 (first paragraph) on page 11, and in the Argument section for 35 U.S.C. 112 (second paragraph) on page 62, and in the Argument section for 35 U.S.C. 102 on page 72, and in the Argument section for 35 U.S.C. 103 on page 90, and in the Argument section for 35 U.S.C. 101 on page 111.

Third, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (vide supra, vide infra).

Fourth, Appellant respectfully disputes this because each and every matter of the invention of which this invention is a divisional was already before the Board. The Appellant has a right to be concise, clear and accurate about what is before the Board.

Fifth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate.

Sixth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, page 5.

Seventh, Appellant notes that this confabulation suggests obstruction of justice under color of law by the Office.

The Office's Ninth False Statement

13. The Office's Communication inaccurately states,

"Not all grounds for rejection have been addressed, e.g., new matter rejection under section 9 of the Final Office Action."

The Truth - The Purported "New Matter Rejection" Was Identified And Discussed

The Office is wrong for at least seven reasons. First, Appellant respectfully disputes this because the purported "new matter rejection" was identified and discussed on pages 3 and 4 in said Notice. Second, Appellant respectfully disputes this because Appellant addressed this matter in the response to the Office in his "Notice of Compliance by Appellant", dated Sept. 17, 2003. In said Notice, the Appellant said on pages 3 and 4,

"The Office's notification states,

"e. The discussion of applicant's contentions in the Argument section is improper. MPEP states, for example, that for each rejection under 35 U.S.C., first paragraph, the argument shall specify the errors in rejection and how said first paragraph is complied with, including as appropriate, how the specification and drawings, if any, a) describe the subject matter defined in each of the rejected claims; b) enable any person skilled in the art to make and use the subject matter defined by each of the rejected claims; and c) set forth the best mode contemplated by the inventor of carrying out the invention. Applicant does not conform to this requirement of cited example of showing how his application complies with the first paragraph"

Applicant has corrected this, as requested."

["Notice of Compliance by Appellant", dated Sept. 17, 2003, pages 3 and 4]

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was discussed on pages 68 through 78 in the Appeal Brief, as said Notice stated on pages 3 and 4. The meticulous effort of the Appellant was again ignored. The Notice was ignored -- despite the fact that it was discussed with specificity on pages 3 and 4 in said Notice of Sept. 17, 2003 and on pages 68 through 78 in the Appeal Brief. Where is the Office's response? There is no honest or substantive response by the Office, and no accountability in the Office. Instead, the Communication of 11/18/03, the second Office Communication once again has a false statement this time ignoring pleadings in the Appeal Brief.

Third, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (vide supra, vide infra).

Fourth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate.

Fifth, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (vide supra, vide infra).

Sixth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, pages 3 and 4.

Seventh, Appellant notes that this confabulation suggests obstruction of justice under color of law by the Office.

The Office's Tenth False Statement

14. The Office's Communication inaccurately states,

"Since the above deficiencies have been listed in the 8/29/03 Office Action, Applicant's failure to correct them is no longer considered inadvertent."

The Truth - There Are No "Deficiencies"

The Truth - Applicant Did Not Failure To Correct Them

The Office is wrong for at least six reasons. First, Appellant respectfully disputes this because there are no "deficiencies". Second, Appellant respectfully disputes this because Applicant did NOT fail to correct them.

Third, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (vide supra, vide infra).

Fourth, Appellant respectfully disputes this because this was discussed on pages 2 though 5 of said Notice.

Fifth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate.

Sixth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, pages 2 though 5.

The Office's Eleventh False Statement

15. The Office's Communication inaccurately states,

"In addition, it is noted that claim 14 is not included in Appendix A of the revised brief."

The Truth - Exhibits Were Submitted And Ignored

The Office is wrong for at least five reasons. First, Appellant respectfully disputes this because the Examiner asked him to correct this.

Second, Appellant respectfully disputes this because Appellant addressed this matter in the response to the Office in his "Notice of Compliance by Appellant", dated Sept. 17, 2003. In said Notice, the Appellant said on 5,

"The Office's notification states,

"f. Appendix A is incorrect because some claims are recited differently from those finally rejected, e.g., claims 1 and 10."

The Applicant has put the correct claims in Appendix "A". Appellant attempted to call the Examiner who refused to address this matter to explain what he was speaking of. The Examiner was reminded that this was for the Board. He refused to discuss it.

The claims are those claims before Final. Attached is copies of the Post Cards stamped by the Office proving receipt [Exhibit "B", also Appendix "C"].

Applicant also presented amendments after Final to comply with the Examiner's suggestions/comments. Attached is the Post Card stamped by the Office showing receipt [Exhibit "B"]. This Exhibit proves Amendments were submitted after Final, and were timely received by the Office.

The claims before Final are in Appendix "A".

The amendments submitted after Final are in Appendix "B". "

["Notice of Compliance by Appellant", dated Sept. 17, 2003, page 5]

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to Appendix A, as said Notice stated on page 5.

Third, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, page 5.

Fourth, where is the Office's response to Exhibit "B" (previously presented to --and received by-- the Office; attached)?

Fifth, in the light of the above, Appellant notes that this confabulation suggests obstruction of justice under color of law by the Office.

The Office's Twelfth False Statement And Most Chaotic Statement

16. The Office's Communication inaccurately states,

"Also, it is noted that Appendix B is mischaracterized as Amendments Entered After Final. "

"To avoid confusion with the claims under Appeal, Appendix B should be deleted."

The Truth - The Office Has Made Two Opposite Dictates Of Appendix B

The Office is wrong for at least four reasons. First, the Office's behavior in this matter is chaotic. As one example, this demand in the Second Communication is opposite the Office's demand in the First Communication.

Second, Appellant respectfully disputes this because Appellant already addressed this matter in the response to the Office in his "Notice of Compliance by Appellant", dated Sept. 17, 2003. In said Notice, the Appellant said on 2,

"The Office's notification states,

"a. The statement of Status of Amendments is improper. Any arguments that the applicant may wish to make regarding these amendments should be discussed in Argument section rather than in this section. There is no Appendix B. contrary to the statement in this section."

Appellant has corrected the statement of the Status of Amendments.
Appendix B is corrected."

["Notice of Compliance by Appellant", dated Sept. 17, 2003, page 2]

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was corrected on page 3 in the Appeal Brief, as said Notice stated on page 2. The effort of the Appellant was ignored.

The Notice was ignored -- despite the fact that it was discussed with specificity on page 2 in said Notice of Sept. 17, 2003. Where is the Office's response? There is no honest or substantive response by the Office, and no accountability in the Office. Instead, the Communication of 11/18/03 chaotically and unfairly demands exactly the opposite of the first Office Communication.

Third, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate.

Fourth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, page 2.

An Example Of The Office's Previous Recent False Statements

17. Previously, in the First Office's notification, Mr. Carone was deceptive and wrong. He stated,

"Not ail grounds for rejection of claims are addressed. For example, the examiner rejected new claims 24, 26 and 28 as non enabling because the specification does not describe how and in what manner the claimed redistribution of isotopic fuel causes the so called impact on a fuel impenetrable barrier. This rejection is not specifically

addressed in the Appeal Brief, as well as the 35 U.S. C. 103(a) rejection of claims discussed in Section 10 of the Final Office Action, dated 2/3103."

The Truth - The Purported "New Matter Rejection" Was Identified And Discussed

Despite the deliberate false statement of Mr. Carone, as stated in the Notice on page 4, Appellant notes that this was already addressed in the Appeal Brief on especially pages 78 and thereafter, but also extending through and including page 95.

NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, page 4.

18. There are at least a dozen errors in the Communication of 11/18/03 by Mr. Carone. This is unfair. This is unreasonable. This has been a pattern. If there was a fifty percent likelihood of each error (that is, if it were made innocently), then the dozen errors reveal that there is only a one in a 4000 likelihood that Mr. Carone is innocent. By contrast, the data heralds that Mr. Carone has been irresponsible, negligent, malicious, and has obstructed justice with systematic actions against the US Constitution and Appellant's civil rights.

Respectfully submitted,

Mitchell R. Swartz, ScD, MD, Appellant, *pro se*

Certificate Of Mailing [37 CFR 1.8(a)]

November 24, 2003

To Whom it Does Concern:

I hereby certify that this correspondence will be deposited with the United States Postal Service by First Class Mail, postage prepaid, in an envelope addressed to

"Office of the Clerk
Board Of Patent Appeals
c/o The Commissioner for Patents
Alexandria, VA 22313-1450" on the date below.

Thank you.

Sincerely,

November 24, 2003 M.R. Swartz

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,691	12/26/2000	Mitchell R. Swartz		4269

7590 11/18/2003

Mitchell R. Swartz, ScD, MD, EE
16 Pembroke Road
Weston, MA 02493.

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 11/18/2003

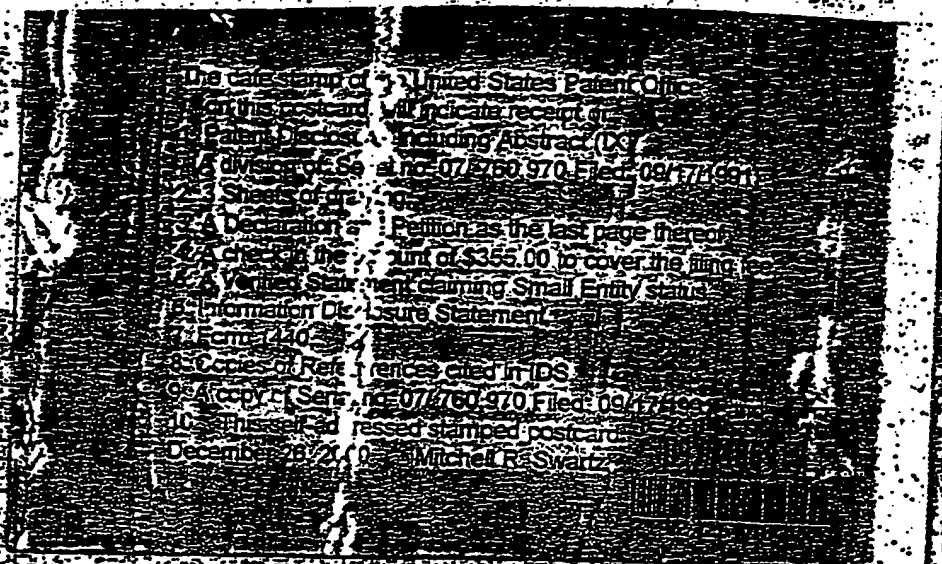
Please find below and/or attached an Office communication concerning this application or proceeding.

EXHIBIT "A"

EXHIBIT "B"

APPENDIX C

The self-addressed stamped postcards bearing the imprimatur of the stamp of the Patent Office's Post Office proving timely receipt of Exhibits and pleadings.



The date stamp of the United States Patent Office
on this postcard will indicate receipt of:
Patent Disclosure including Abstract (DC
Division of Se ation of 07/760,970 Filed: 09/17/1991
Sheets of dr Oath
A Declaration Petition as the last page thereof
A check in the unt of $355.00 to cover the filing fee
Verified Stat ent claiming Small Entity status
Information Di closure Statement
Form 1440
Copies of Refe rences cited in IDS
A copy of Seri ion of 07/760,970 Filed: 09/17/1991
This self-ad ressed stamped postcard.
December 28, 2000 Mitchell R. Swartz

The date stamp of the United States Patent Office
on this postcard will indicate receipt of:
1. Applicant's Response to Communication of 9/5/02,
2. with a Certificate of Mailing on the last page.
3. Declaration of Dr. Mitchell R. Swartz.
4. A packet of additional Declarations.
5. Several packets of References with Forms 1440,
6. A copy of the Abstract requested by the Examiner,
7. From 970: Amendment under Rule 116 (11/2/93),
8. From 970: Reply Brief to Examiner (4/23/94), and
9. Appendix "Introduction to Barriers", and
10. This self-addressed stamped postcard.

S.N. 09/748,591 Filed: 12/26/2000
Thank you. Dr. M Swartz
Mailed: November 4, 2002

The date stamp of the United States Patent Office
on this postcard will indicate receipt of:
1. Applicant's Amended "Response to Comm of 7/22/02",
2. with a Certificate of Mailing on the last page.
3. Exhibit "REQ" Showing The Request,
4. Exhibit "REC" With Date-Stamp Proving Receipt Of
Declaration, References, Forms PTO-144,
Other materials and Appendix "Introduction to Barriers", and

The date stamp of the United States Patent Office
on this postcard, will indicate receipt of:
1. "Response of Applicant to Office Action",
with a Certificate of mailing
on the last page thereof, and
2. Version With Markings To Show Changes Made,
3. Petition To The Commissioner Supported By A
3. Declaration of Dr. Mitchell Swartz
4. Several Packages Of Exhibits Rebutting The Examiner,
5. Forms 1440 For All Exhibits, and
6. This self-addressed stamped postcard.
S.N. 09/748,691 Filed: 12/26/2000
Thank you.
Mailed: March 24, 2003 Dr. Mitchell Swartz

The date stamp of the United States Patent Office
on this postcard will indicate receipt of:
1. "Applicant's Response To
The Office Communication Of 4/15/03",
with a Certificate of mailing
on the last page thereof, and
2. This self-addressed stamped postcard.
S.N.09/748,691 Filed: 12/26/2000
Thank you.
Mailed: April 19, 2003 Mitchell Swartz

The date stamp of the United States Patent Office
on this postcard will indicate receipt of:

1. "Petition To The Commissioner",
with a Certificate of mailing
on the last page thereof, and
2. Declaration of Dr. Mitchell Swartz, and
3. This self-addressed stamped postcard.
S.N. 09/748,691 Filed: 12/26/2000
Thank you.
Mailed: April 19, 2003 Dr. Mitchell Swartz

APPENDIX B

The date stamp of the United States Patent Office on this postcard will indicate receipt of:
1. "Petition To The Commissioner", with a Certificate of mailing on the last page thereof, and
2. Declaration of Dr. Mitchell Swartz, and
3. This self-addressed stamped postcard.

S.N. 09/738,691 Filed: 12/26/2000

Thank you.

Mailed: April 30, 2003 Dr. Mitchell Swartz

OIPE MAY 05 2003 PATENT & TRADEMARK OFFICE

The date stamp of the United States Patent Office on this postcard will indicate receipt of:
1. "Notice Of Appeal", ~~$110.00~~ $160.00
with a Certificate of mailing on the last page thereof, and
2. This self-addressed stamped postcard.

S.N. 09/738,691 Filed: 12/26/2000

Thank you.

Mailed: April 30, 2003 Mitchell Swartz

OIPE MAY 05 2003 PATENT & TRADEMARK OFFICE

OIPE JUN 03 2003 PATENT & TRADEMARK OFFICE

The date stamp of the Board Of Patent Appeals on this postcard will indicate receipt of:
1) Appellant's Appeal Brief (in triplicate),
2) containing a Certificate of Service on the last page,
3) Appellant's Appendix attached thereto,
4) Appellant's Certificate Of Mailing,
5) Appellant's check in the amount of $160, and
6) This Self-addressed postcard for the date stamp of the Board Of Patent Appeals.

Thank you. Dr. Mitchell R. Swartz

Mailed June 29, 2003

RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 3641

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For: METHOD TO CONTROL REACTIONS
INVOLVING ISOTOPIC FUEL
WITHIN A MATERIAL USING
ORTHOGONAL ELECTRIC-FIELDS
Serial no. 09/ 748,691
Filed: 12/26/2000
This is a division of Serial no. 07/ 760,970
Filed: 09/17/1991

Group Art Unit: 3641
Examiner: Palabrica, R.J.

January 28, 2004

Office of the Clerk
Board Of Patent Appeals
c/o The Commissioner for Patents
Alexandria, VA 22313-1450

Appellant's Notice To The Board Of False Statements In An Office Communication Dated 1/22/04

1. This is Appellant's Response to the Office's communication dated 1/22/04 (cover as Exhibit "1", attached). Said communication is stamped by Michael Carone, but is undated.

2. Said office communication purports that there are errors in the Appeal Brief dated Sept. 17, 2003 of the above-entitled action.

3. Said office communication substantively ignores the Appellants Communication dated November 24, 2003 Therefore, the Appellant respectfully disputes each of these. The Appellant will demonstrate that it is Mr. Carone who has made a series of errors which the Appellant will forensically detail below. One reason is that the Board remanded a case to Mr. Carone (cover as Exhibit "2", attached), and since that day, Mr. Carone has personally

attempted to throw out each and every one of the Applicant's patent applications in an apparent attempt to obstruct justice and deny or usurp the Applicant his Constitutional and civil rights.

4. In point, attention is directed to the fact that the most recent office communication was egregiously withheld, then mailed late to arrive on January 26, 2004 so that Appellant would have insufficient time to respond.

The Office's First False Statement

5. The Office's Communication inaccurately states,

"4. Item 3 .... of the 11/18/03 Notice regarding incompleteness of the Arguments section have not been properly addressed and corrected."

The Truth - The Appellant Responded

The Examiner has been unresponsive to Applicant's arguments even though they were fully discussed in significant detail in the previous Communication from the Applicant to the Examiner. For example, in said Communication, the Applicant took the time to respond to the Examiner and wrote the following comments.

"The Office's notification states, "*d. The statement on Grouping of Claims is improper because it includes arguments as to why certain claims do not stand or fall together. These arguments should be in the Argument section.*"

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was corrected on page 10 in the Appeal Brief in the ISSUES section, and then on page 11 of the Argument section for 35 U.S.C. 112 (first paragraph), and then on page 62 of the Argument section for 35 U.S.C. 112 (second paragraph), and then on page 72 of the Argument section for 35 U.S.C. 102, and then on page 90 of the Argument section for 35 U.S.C. 103, and then on page 111 of the Argument section for 35 U.S.C. 101, as said Notice stated on page 5.

The meticulous effort of the Appellant was again ignored. The Notice was ignored – despite the fact that it was discussed with specificity on page 5 in said Notice of Sept. 17, 2003. Where is the Office's response? There is no honest or substantive response by the Office, and no accountability in the Office to this matter. Instead, the Communication of 11/18/03, the second Office Communication once again has a false statement this time ignoring pleadings in the Appeal Brief in the ISSUES section on page 10, and in the Argument section for 35 U.S.C. 112 (first paragraph) on page 11, and in the Argument section for 35 U.S.C. 112 (second paragraph) on page 62, and in the Argument section for 35 U.S.C. 102 on page 72, and in the Argument section for 35 U.S.C. 103 on page 90, and in the Argument section for 35 U.S.C. 101 on page 111.

Third, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (*vide supra, vide infra*).

Fourth, Appellant respectfully disputes this because each and every matter of the invention of which this invention is a divisional was already before the Board. The Appellant has a right to be concise, clear and accurate about what is before the Board.

Fifth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate.

Sixth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, page 5.

Seventh, Appellant notes that this confabulation suggests obstruction of justice under color of law by the Office."

["Appellant's Notice to the Board", dated Nov, 18, 2003]

Attention is now directed to the fact that said comments in Applicant's Communication have simply been ignored by the Examiner. The Examiner did not cite Applicant's arguments, nor did the Examiner discuss Applicant's arguments, nor did the Examiner rebut Applicant's arguments. Therefore it is impossible to tell how the Examiner weighed Applicant's arguments. Because the Examiner was requested to answer and respond with specificity, the Examiner has apparently ignored the Office rules, and expectations of reasonable people. Therefore, given the above, the Applicant hereby again requests to know the substantive precise reason, scientific basis, or authority which allows the Examiner to dismiss this Argument by the Applicant without citation, analysis, or substantive coherent response. Specifically, the Applicant hereby requests to know the basis which allows the Examiner to dismiss the Argument that,

" the Communication of 11/18/03, the second Office Communication once again has a false statement this time ignoring pleadings in the Appeal Brief in the ISSUES section on page 10, and in the Argument section for 35 U.S.C. 112 (first paragraph) on page 11, and in the Argument section for 35 U.S.C. 112 (second paragraph) on page 62, and in the Argument section for 35 U.S.C. 102 on page 72, and in the Argument section for 35 U.S.C. 103 on page 90, and in the Argument section for 35 U.S.C. 101 on page 111."

The Office's Second False Statement

6. The Office's Communication inaccurately states,

"4. Item 3 .. of the 11/18/03 Notice regarding incompleteness of the Arguments section have not been properly addressed and corrected."

The Truth - The Appellant Responded

The Examiner has been unresponsive to Applicant's arguments even though they were fully discussed in significant detail in the previous Communication from the Applicant to the Examiner. For example, in said Communication, the Applicant took the time to respond to the Examiner and wrote the following comments.

"12. The Office's Communication inaccurately states,

"*3. The Grouping of Claims states that claims do not stand or fall together.*"

" However, there is not discussion in the Arguments section of why EACH claim is considered separately patentable."

THE TRUTH - there is not discussion in the Arguments section of why EACH claim is considered separately patentable

The Office is wrong for at least seven reasons. First, Appellant respectfully disputes this because there is discussion in the Arguments section of why EACH claim is considered separately patentable.

Second, Appellant respectfully disputes this because Appellant addressed this matter in the response to the Office in his "Notice of Compliance by Appellant', dated Sept. 17, 2003. In said Notice, the Appellant said on 5,

"The Office's notification states,

"d. The statement on Grouping of Claims is improper because it includes arguments as to why certain claims do not stand or fall together. These arguments should be in the Argument section."

The Applicant has corrected this as requested."

["Notice of Compliance by Appellant", dated Sept. 17, 2003, page 5]

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was corrected on page 10 in the Appeal Brief in the ISSUES section, and then on page 11 of the Argument section for 35 U.S.C. 112 (first paragraph), and then on page 62 of the Argument section for 35 U.S.C. 112 (second paragraph), and then on page 72 of the Argument section for 35 U.S.C. 102, and then on page 90 of the Argument section for 35 U.S.C. 103, and then on page 111 of the Argument section for 35 U.S.C. 101, as said Notice stated on page 5.

The meticulous effort of the Appellant was again ignored. The Notice was ignored – despite the fact that it was discussed with specificity on page 5 in said Notice of Sept. 17, 2003. Where is the Office's response? There is no honest or substantive response by the Office, and no accountabiiity in the Office. Instead, the Communication of 11/18/03, the second Office Communication once again has a false statement this time ignoring pleadings in the Appeal Brief in the ISSUES section on page 10, and in the Argument section for 35 U.S.C. 112 (first paragraph) on page 11, and in the Argument section for 35 U.S.C. 112 (second paragraph) on page 62, and in the Argument section for 35 U.S.C. 102 on page 72, and in the Argument section

for 35 U.S.C. 103 on page 90, and in the Argument section for 35 U.S.C. 101 on page 111.

Third, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (vide supra, vide infra).

Fourth, Appellant respectfully disputes this because each and every matter of the invention of which this invention is a divisional was already before the Board. The Appellant has a right to be concise, clear and accurate about what is before the Board. Fifth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate. Sixth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, page 5. Seventh, Appellant notes that this confabulation suggests obstruction of justice under color of law by the Office."

["Appellant's Notice to the Board", dated Nov, 18, 2003]

Attention is now directed to the fact that said comments in Applicant's Communication have simply been ignored by the Examiner. The Examiner did not cite Applicant's arguments, nor did the Examiner discuss Applicant's arguments, nor did the Examiner rebut Applicant's arguments. Therefore it is impossible to tell how the Examiner weighed Applicant's arguments. Because the Examiner was requested to answer and respond with specificity, the Examiner has apparently ignored the Office rules, and expectations of reasonable people. Therefore, given the above, the Applicant hereby again requests to know the substantive precise reason, scientific basis, or authority which allows the Examiner to dismiss this Argument by the Applicant without citation, analysis, or substantive coherent response. Specifically, the Applicant hereby requests to know the basis which allows the Examiner to dismiss the Argument that,

"Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was corrected on page 10 in the Appeal Brief in the ISSUES section, and then on page 11 of the Argument section for 35 U.S.C. 112 (first paragraph), and then on page 62 of the Argument section for 35 U.S.C. 112 (second paragraph), and then on page 72 of the Argument section for 35 U.S.C. 102, and then on page 90 of the Argument section for 35 U.S.C. 103, and then on page 111 of the Argument section for 35 U.S.C. 101, as said Notice stated on page 5."

The Office's Third False Statement

7. The Office's Communication inaccurately states,

"4. Item ... 4 of the 11/18/03 Notice regarding incompleteness of the Arguments section have not been properly addressed and corrected."

The Truth - The Appellant Responded

The Examiner has been unresponsive to Applicant's arguments even though they were fully discussed in significant detail in the previous Communication from the Applicant to the Examiner. For example, in said Communication, the Applicant took the time to respond to the Examiner and wrote the following comments.

"11. The Office's Communication inaccurately states, "*4. The Arguments section is still incomplete and improper.* "

THE TRUTH - The Arguments section is complete and proper

The Office is wrong for at least five reasons. First, Appellant respectfully disputes this because the Arguments section is complete and proper.

Second, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (*vide supra, vide infra*).

Third, Appellant respectfully disputes this because it was discussed on pages 11 through 61 of the Argument section for 35 U.S.C. 112 (first paragraph), and then on pages 62 through 71 of the Argument section for 35 U.S.C. 112 (second paragraph), and then on pages 72 through 89 of the Argument section for 35 U.S.C. 102, and then on pages 90 through 110 of the Argument section for 35 U.S.C. 103, and then on pages 111 through 119 of the Argument section for 35 U.S.C. 101.

Fourth, Appellant respectfully disputes this because each and every matter of the invention of which this invention is a divisional was already before the Board. The Appellant has a right to be concise, clear and accurate about what is before the Board.

Fifth, Appellant notes that said confabulation suggests obstruction of justice under color of law by the Office."

["Appellant's Notice to the Board", dated Nov, 18, 2003]

Attention is now directed to the fact that said comments in Applicant's Communication have simply been ignored by the Examiner. The Examiner did not cite Applicant's arguments, nor did the Examiner discuss Applicant's arguments, nor did the Examiner rebut Applicant's arguments. Therefore it is impossible to tell how the Examiner weighed Applicant's arguments. Because the Examiner was requested to answer and respond with specificity, the Examiner has apparently ignored the Office rules, and expectations of reasonable people. Therefore, given the above, the Applicant hereby again requests to know the substantive precise reason, scientific basis, or authority which allows the Examiner to dismiss this Argument by the Applicant without citation, analysis, or substantive coherent response. Specifically, the Applicant hereby requests to know the basis which allows the Examiner to dismiss the Argument that,

"Third, Appellant respectfully disputes this because it was discussed on pages 11 through 61 of the Argument section for 35 U.S.C. 112 (first paragraph), and then on pages 62 through 71 of the Argument section for 35 U.S.C. 112 (second paragraph), and then on pages 72 through 89 of the Argument section for 35 U.S.C. 102, and then on pages 90 through 110 of the Argument section for 35 U.S.C. 103, and then on pages 111 through 119 of the Argument section for 35 U.S.C. 101."

The Office's Fourth False Statement

8. The Office's Communication inaccurately states,

"4. Item ... 4 of the 11/18/03 Notice regarding incompleteness of the Arguments section have not been properly addressed and corrected."

The Truth - The Purported "New Matter Rejection" Was Identified And Discussed

. The Office's Communication stated, "Not all grounds for rejection have been addressed, e.g., new matter rejection under section 9 of the Final Office Action. "

However, the Examiner has been unresponsive to Applicant's arguments even though they were fully discussed in significant detail in the previous Communication from the Applicant to the Examiner. For example, in said Communication, the Applicant took the time to respond to the Examiner and wrote the following comments.

"The Office is wrong for at least seven reasons. First, Appellant respectfully disputes this because the purported "new matter rejection" was identified and discussed on pages 3 and 4 in said Notice. Second, Appellant respectfully disputes this because Appellant addressed this matter in the response to the Office in his "Notice of Compliance by Appellant", dated Sept. 17, 2003. In said Notice, the Appellant said on pages 3 and 4,

"The Office's notification states,

"e. The discussion of applicant's contentions in the Argument section is improper. MPEP states, for example, that for each rejection under 35 U.S.C., first paragraph, the argument shall specify the errors in rejection and how said first paragraph is complied with, including as appropriate, how the specification and drawings, if any, a) describe the subject matter defined in each of the rejected claims; b) enable any person skilled in the art to make and use the subject matter defined by each of the rejected claims; and c) set forth the best mode contemplated by the inventor of carrying out the invention. Applicant does not conform to this requirement of cited example of showing how his application complies with the first paragraph"

Applicant has corrected this, as requested."

["Notice of Compliance by Appellant", dated Sept. 17, 2003, pages 3 and 4]

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was discussed on pages 68 through 78 in the Appeal Brief, as said Notice stated on pages 3 and 4. The meticulous effort of the Appellant was again ignored. The Notice was ignored -- despite the fact that it was

discussed with specificity on pages 3 and 4 in said Notice of Sept. 17, 2003 and on pages 68 through 78 in the Appeal Brief. Where is the Office's response? There is no honest or substantive response by the Office, and no accountability in the Office. Instead, the Communication of 11/18/03, the second Office Communication once again has a false statement this time ignoring pleadings in the Appeal Brief.

Third, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (vide supra, vide infra).

Fourth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate. Fifth, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (vide supra, vide infra). Sixth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, pages 3 and 4. Seventh, Appellant notes that this confabulation suggests obstruction of justice under color of law by the Office."

["Appellant's Notice to the Board", dated Nov, 18, 2003]

Attention is now directed to the fact that said comments in Applicant's Communication have simply been ignored by the Examiner. The Examiner did not cite Applicant's arguments, nor did the Examiner discuss Applicant's arguments, nor did the Examiner rebut Applicant's arguments. Therefore it is impossible to tell how the Examiner weighed Applicant's arguments. Because the Examiner was requested to answer and respond with specificity, the Examiner has apparently ignored the Office rules, and expectations of reasonable people. Therefore, given the above, the Applicant hereby again requests to know the substantive precise reason, scientific basis, or authority which allows the Examiner to dismiss this Argument by the Applicant without citation, analysis, or substantive coherent response. Specifically, the Applicant hereby requests to know the basis which allows the Examiner to dismiss the Argument that,

"Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was discussed on pages 68 through 78 in the Appeal Brief, as said Notice stated on pages 3 and 4. The meticulous effort of the Appellant was again ignored."

The Office's Fifth False Statement

9. The Office's Communication inaccurately states,

"3. As to "operability" being a 35 U.S.C. 101 rather than a 35 U.S.C. 112, first and second paragraph issue, there has not been any change on the Office interpretation of this matter, contrary to the allegation of the Applicant."

The Truth - The Appellant Responded

The Examiner has been unresponsive to Applicant's arguments even though they were fully discussed in significant detail in the previous Communication from the Applicant to the Examiner. For example, in said Communication, the Applicant took the time to respond to the Examiner and wrote the following comments.

" 8. The Office's Communication inaccurately states,

" *The claimed "operability" of the invention is not a 35 U.S.C, 112, first and second paragraph issues, but a 35 U.S.C. 101 issue.* "

The Office is wrong for at least four reasons. First, Appellant respectfully disputes this because this is nonsense. For ten years the Office has cited "operability" pursuant to 35 U.S.C, 112, first paragraph issues. All of a sudden, Mr. Carone changes the Office's previous arguments that were reasonably consistent over more than a decade in this matter. This is egregious without a clear substantive basis for the paroxysmal change.

Second, Appellant respectfully disputes this because a 35 U.S.C. 101 issue involves utility and not "operability". Appellant discussed this in detail. Attention of the Court, Board, and Commissioner is now directed to where it was discussed in detail on pages 111 through 119 in the Appeal Brief. The effort of the Appellant was ignored. Where is the Office's response? Instead, the Communication of 11/18/03, the second Office Communication once again has a false statement. Third, Appellant respectfully disputes this because each and every matter of the invention of which this invention is a divisional was already before the Board. The Appellant has a right to be concise, clear and accurate about what is before the Board. Fourth, Appellant respectfully disputes this purported change by the Office because this is a new argument of the Office, and should be in the Argument section of the Office's response.

["Appellant's Notice to the Board", dated Nov, 18, 2003]

Attention is now directed to the fact that said comments in Applicant's Communication have simply been ignored by the Examiner. The Examiner did not cite Applicant's arguments, nor did the Examiner discuss Applicant's arguments, nor did the Examiner rebut Applicant's arguments. Therefore it is impossible to tell how the Examiner weighed Applicant's arguments. Because the Examiner was requested to answer and respond with specificity, the Examiner has apparently ignored the Office rules, and expectations of reasonable people. Therefore, given the above, the Applicant hereby again requests to know the substantive precise reason, scientific basis, or authority which allows the Examiner to dismiss this Argument by the Applicant without citation, analysis, or substantive coherent response.

The Office's Sixth False Statement

10. The Office's Communication inaccurately states,

"2. As to recitation of issues still improper, see for example the last paragraph on page 9 of the Amended Appeal Brief."

The Truth - The Appellant Responded

The Examiner has been unresponsive to Applicant's arguments even though they were fully discussed in significant detail in the previous Communication from the Applicant to the Examiner. For example, in said Communication, the Applicant took the time to respond to the Examiner and wrote the following comments.

"6. The Office's Communication inaccurately states,

"2. The recitation of Issues is still improper (see item c of the previous OA)."

THE TRUTH - the recitation of Issues is proper

The Office is wrong for at least six reasons. First, Appellant respectfully disputes this because the recitation of Issues is indeed proper.

Second, Appellant respectfully disputes this because Appellant addressed this matter in the response to the Office in his "Notice of Compliance by Appellant", dated Sept. 17, 2003. In said Notice, the Appellant said on pages 3 and 4,

"The Office's notification states,

"c. The recitation and scope of Issues is improper. MPEP 1206 states that each stated issue should correspond to a separate ground of rejection which the appellant washes the Board to review. The statement of issues should not include any argument concerning the merit of the issues. For example, a proper way of phrasing an issue is as follows: 'Whether claims 1, 5 8, 10 14 and 21 30 are unpatentable under U.S.C. 101 because the claimed invention is inoperative and therefore lacks unity." Applicant improperly includes other issues not relevant to the grounds of rejection used by the examiner, e.g., U.S. Constitution."

"The Applicant has corrected this as requested. The Applicant has removed the offending references to the " U.S. Constitution." and reserves his rights to take the Constitutional issues to the Federal Court, First Circuit by this unconstitutional action of the Office and/or Board censoring the very document which enables the Office."

The Applicant has corrected this, and removed the citation from this section."

["Notice of Compliance by Appellant", dated Sept. 17, 2003, pages 3 and 4]

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was corrected on pages 8 through 9 in the Appeal Brief, as said Notice stated on pages 3 and 4. The effort of the Appellant was ignored. The Notice was ignored – despite the fact that it was discussed with specificity on pages 3 and 4 in said Notice of Sept. 17, 2003. Where is the Office's response? There is no honest or substantive response by the Office, and no accountability in the Office. Instead, the Communication of 11/18/03, the second Office Communication once again has a false statement.

Third, Appellant respectfully disputes this because each and every matter of the invention of which this invention is a divisional was already before the Board. The Appellant has a right to be concise, clear and accurate about what is before the Board.

Fourth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate.

Fifth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, pages 3 and 4.

Sixth, in the legal system, it is Appellant who makes notice of the Appeal - and not the Office. The Office is demanding that IT fashion the Appellant's issues. For some unknown reason, the Office now demands to control the thought, the Appeal, the issues, and the Arguments as of this date. That is unlawful and consistent with harassment, and has much more than an appearance of impropriety."

["Appellant's Notice to the Board", dated Nov, 18, 2003]

Attention is now directed to the fact that said comments in Applicant's Communication have simply been ignored by the Examiner. The Examiner did not cite Applicant's arguments, nor did the Examiner discuss Applicant's arguments, nor did the Examiner rebut Applicant's arguments. Therefore it is impossible to tell how the Examiner weighed Applicant's arguments. Because the Examiner was requested to answer and respond with specificity, the Examiner has apparently ignored the Office rules, and expectations of reasonable people. Therefore, given the above, the Applicant hereby again requests to know the substantive precise reason, scientific basis, or authority which allows the Examiner to dismiss this Argument by the Applicant without citation, analysis, or substantive coherent response. Specifically, the Applicant hereby requests to know the basis which allows the Examiner to dismiss the Argument that,

"The Applicant has corrected this as requested. The Applicant has removed the offending references to the " U.S. Constitution."

The Office's Seventh False Statement

11. The Office's Communication inaccurately states,

"1. As to the summary still containing subject matter not found in the specification, see for example, page 4, 2nd paragraph and page 7, last three paragraphs of the 9/23/03 Amendment of the Appeal Brief (An-ended Appeal Brief."

This is new material and was not specificed in the previous notice. Furthermore, the Examiner has been unresponsive to Applicant's arguments even though they were fully discussed in significant detail in the previous Communication from the Applicant to the Examiner. For example, in said Communication, the Applicant took the time to respond to the Examiner and wrote the following comments.

"*1. The Summary still includes subject matter not found in the specification (see item b of previous Office Action).*"

The Office is wrong for at least five reasons. First, Appellant respectfully disputes this because the subject matter was discussed in the specification.

Second, Appellant respectfully disputes this because Appellant addressed this matter in the response to the Office in his "Notice of Compliance by Appellant", dated Sept. 17, 2003. For example, in said Notice, the Appellant said on page 2,

"The Office's notification (of 8/28/03) states,

"*The Summary includes subject matter not found in the specification (see page 7, last three paragraphs).*"

The Applicant has corrected this, and removed the citation from this section."

["Notice of Compliance by Appellant", dated Sept. 17, 2003, page 2]

In fact, as stated to the Office in said Notice, the Appellant did correct it. Furthermore, to prove this with specificity, attention of the Court, Board, and Commissioner is now directed to where it was corrected on pages 4 through 7 in the Appeal Brief, as said Notice stated on page 2. Not only was the effort of the Appellant ignored, but the Notice itself was ignored – despite the fact that it was discussed with specificity on page 2 in said Notice of Sept. 17, 2003. Where is the Office's response? There is no honest or substantive response by the Office, and no accountability in the Office. Instead, the Communication of 11/18/03, the second Office Communication , once again has a false statement.

Third, Appellant respectfully disputes this because each and every matter of the invention was already before the Board. The Appellant has a right to present his case and for it to be concise, clear and accurate before the Board.

Fourth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate. Fifth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, page 2.

["Appellant's Notice to the Board", dated Nov, 18, 2003]

Attention is now directed to the fact that said comments in Applicant's Communication have simply been ignored by the Examiner. Nonetheless, the Appellant will excise the offending paragraphs, and will resubmit to please the Examiner and Mr. Carone, who will not allow an appeal because they have received a Remand from the Board already [Exhibit "2"].

The Office's Eighth False Statement

12. The Office's Communication inaccurately states,

"Since the above deficiencies have been listed in the 8/29/03 Office Action and in the 11/18/03 Notice of Non-Responsive Amendment, Applicant's failure to correct them is not considered inadvertent."

The Truth - The Appellant Responded

The Examiner has been unresponsive to Applicant's arguments even though they were fully discussed in significant detail in the previous Communication from the Applicant to the Examiner. For example, in said Communication, the Applicant took the time to respond to the Examiner and wrote the following comments.

"14. The Office's Communication inaccurately states,

"*Since the above deficiencies have been listed in the 8/29/03 Office Action, Applicant's failure to correct them is no longer considered inadvertent.*"

The Office is wrong for at least six reasons. First, Appellant respectfully disputes this because there are no "deficiencies". Second, Appellant respectfully disputes this because Applicant did NOT fail to correct them.

Third, Appellant respectfully disputes this because the Office is nonspecific, consistent with confabulation (vide supra, vide infra).

Fourth, Appellant respectfully disputes this because this was discussed on pages 2 though 5 of said Notice.

Fifth, Appellant already made changes because the Office demanded it in the previous first Communication, as discussed above. Appellant took the time and money to make new briefs in triplicate.

Sixth, Appellant respectfully disputes this because NONE of this has been addressed by the Office in said "Notice of Compliance by Appellant", dated Sept. 17, 2003, pages 2 though 5.

["Appellant's Notice to the Board", dated Nov, 18, 2003]

Attention is now directed to the fact that said comments in Applicant's Communication have simply been ignored by the Examiner. The Examiner did not cite Applicant's arguments, nor did the Examiner discuss Applicant's arguments, nor did the Examiner rebut Applicant's arguments.

Furthermore, attention is directed to the fact that despite the Office's allegation, the Appellant made many many changes including entering claim 14 in Appendix A of the revised brief as requested, including responding to the Examiner (incorrect) demand that Appendix B should be deleted, and including responding to the Examiner (incorrect) demand that not all grounds for rejection of claims are addressed regarding new claims 24, 26 and 28. These and other demands by the Examiner (made to unconstitutionally prevent an Appeal) were satisfied. Instead, of abidiing by the law, there are at least a dozen errors in the Communication of 11/18/03 by Mr. Carone.

This is unfair. This is unreasonable. This has been a pattern. Since receipt of the Remand from the Board, the Examiner and/or Mr. Carone has made false statement after false statement. If there was a fifty percent likelihood of each error (that is, if it were made innocently), then the scores of errors since then reveal that there is only a one in a trillion likelihood that Mr. Carone and/or the Examiner are innocent.

Applicant respectfully notes that the U.S. Supreme Court has ruled that any pro se litigant is entitled to less stringent standards [U.S. Rep volume 404, pages 520-521 (72)].

WHEREFORE for the above reasons, the Applicant (now Appellant) respectfully requests a reversal, and substantive response, and an apology from the Office to the Board for the delay of an energy-related patent application (while the US is at War involving energy and terror) with rapid transfer of the Exhibits and Appeals Briefs to the Board so that justice can finally arrive.

Respectfully submitted,

Mitchell R. Swartz, ScD, MD, Appellant, *pro se*

Certificate Of Mailing [37 CFR 1.8(a)]

January 28, 2004

To Whom it Does Concern:
I hereby certify that this correspondence will be deposited with the United States Postal Service by First Class Mail, postage prepaid, in an envelope addressed to
"Office of the Clerk
Board Of Patent Appeals
c/o The Commissioner for Patents
Alexandria, VA 22313-1450" on the date below.

Thank you.

Sincerely,

January 28, 2004

M.R. Swartz
Weston, MA 02493

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,691	12/26/2000	Mitchell R. Swartz		4269

7590 01/22/2004

EXAMINER	

Mitchell R. Swartz, ScD, MD, EE
16 Pembroke Road
Weston, MA 02493

ART UNIT	PAPER NUMBER

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

EXHIBIT "1"

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 68

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE DIRECTOR
OF
THE UNITED STATES PATENT AND TRADEMARK OFFICE

MAILED

APR 21 2003

PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

In re Application of

MITCHELL R. SWARTZ

Appeal No. 1997-3208
Application No. 07/339,976

EXHIBIT "2"

DECISION ON PETITION

On September 24, 1998, Petitioner Swartz (Swartz) filed (1) a petition to the Commissioner, hereinafter referred to as Director, pursuant to 37 CFR § 1.181 (Paper No. 66) and (2) a motion for a finding of contempt pursuant to 18 U.S.C. § 401 (Paper No. 67). These papers were brought to the attention of the Board of Patent Appeals and Interferences (Board) on March 12, 2003. The delay was predicated on the need for the Examining Corps to address an earlier petition under 37 CFR § 1.181 filed November 24, 1007 (Paper No. 62). The delay in responding to this petition is deeply regretted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PAPER:

For: METHOD TO CONTROL REACTIONS INVOLVING ISOTOPIC FUEL WITHIN A MATERIAL USING ORTHOGONAL ELECTRIC-FIELDS

Serial no. 09/ 748,691
Filed: 12/26/2000

This is a division of Serial no. 07/ 760,970
Filed: 09/17/1991

Group Art Unit: 3641
Examiner: Palabrica, R.J.

April 30, 2003

Commissioner of Patents and Trademarks
P.O.Box 1450 Alexandria, VA 22313-1450

NOTICE OF APPEAL

1. The Applicant hereby files a notice of appeal to the United States Patent Office Board of Appeals and Patent Interferences from the Examiner's final action: a Final Rejection of the above-entitled application, which was mailed on February 3, 2003 (Exhibit "A", copy is attached hereto).

2. In the above-entitled action, the Applicant has two Petitions to the Commissioner pending. Therefore, Applicant files this Notice but advises that action be held for two reasons in the light of said Petititions. The first reason is the importance of judicial economy, and the second is because 35 U.S.C. 134 states

"An applicant for a patent, any of whose claims has been twice rejected, may appeal from the decision of the administrative patent judge to the Board of Patent Appeals and Interferences ..."

In the above-entitled action, Applicant's timely submitted arguments, Declarations, Exhibits, etc. were substantively ignored. Therefore, the claims were once rejected. Furthermore, at the FINAL, the Examiner included his own new material and did not let the Applicant rebut it.

3. Given that the Applicant has asked the Commissioner to address this by Petition for judicial economy, and

given that this case was previously before the Board as Appeal No. 94-2920 [S.N. 07/760,970 of which this is a divisional, written without new material and accompanied by Declarations and Exhibits to comply with the Board], and

given that the Examiner still has not responded to the Declarations,

Applicant requests --if necessary in that it is not resolved by said Petition to the Commissioner -- revival of said case [Board as Appeal No. 94-2920] before the Board associated with '970 at the Board, so as to simply the record, and thereafter simply direct the Examiner to comply with the Office's standards of review and the previous Decisions of the Board to respond to said Exhibits and said Declarations.

Respectfully submitted,

Mitchell R. Swartz, ScD, MD, EE
Post Office Box 81135
Wellesley Hills, Mass. 02481

Certificate Of Mailing
[pursuant MPEP Section 512 and 37 CFR 1.8(a)]

April 30, 2003

To Whom it Does Concern:

I hereby certify that this correspondence will be deposited with the United States Postal Service by First Class Mail, postage prepaid, in an envelope addressed to
"The Commissioner of Patents and Trademarks
P.O.Box 1450 Alexandria, VA 22313-1450" on the date below.

Thank you.

Sincerely,

April 30, 2003

M.R. Swartz

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,691	12/26/2000	Mitchell R. Swartz		4269

7590 02/03/2003

Mitchell R. Swartz, ScD, MD, EE
16 Pembroke Road
Weston, MA 02493

EXAMINER
PALABRICA, RICARDO J

ART UNIT	PAPER NUMBER
3641	

DATE MAILED: 02/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

EXHIBIT "A"

RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 3641

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PAPER:

For: METHOD TO CONTROL REACTIONS INVOLVING ISOTOPIC FUEL WITHIN A MATERIAL USING ORTHOGONAL ELECTRIC-FIELDS
Serial no. 09/ 748,691
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This is a division of Serial no. 07/ 760,970
Filed: 09/17/1991

Group Art Unit: 3641
Examiner: Palabrica, R.J.

April 30, 2003

DECLARATION OF DR. MITCHELL SWARTZ

I, Mitchell R. Swartz, declare that I am a citizen of the United States of America and the inventor of the invention described in the above-entitled application.

1. I have a background in electrical engineering, material science, electrophysicist and electrochemistry and have worked in this field for more than a decade, and have worked on experimental projects at the Massachusetts Institute of Technology, Massachusetts General Hospital and elsewhere.

2. I made a complete, meticulous, and full reply to the Examiner. In said reply, I answered all of the Examiner's criticisms, and duly and timely responded with Declarations, peer-reviewed papers, and Exhibits. They were described in pleadings written in English that explained where the Examiner was in error. The Examiner ignored most of my arguments and misstated others, and ignored all of the Declarations and Exhibits substantively.

3. The Examiner instead added his own new material. I responded again to show the Examiner his errors but he not only ignored all the Declarations and Exhibits, but refused to send my the checked off Forms 1449.

4. The Examiner would not clarify the issues for an Appeal.

5. The Examiner has refused to answer how many Declarations or peer-reviewed papers [proving I was correct at the time of the filing of the original specification and claims] are required to refute his statements about operability.

6. The Examiner has refused to answer how many Declarations are required to refute his statement about utility.

Mitchell R. Swartz, ScD, MD

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true.

Signature of Inventor:
April 30, 2003

Mitchell R. Swartz, ScD, MD
Post Office Box 81135
Wellesley Hills, Mass. 02481

Paper No. 36

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MITCHELL R. SWARTZ

Appeal No. 94-2920
Application 07/760,970[1]

ORDER REMANDING TO EXAMINER

An Information Disclosure Statement was filed April 28, 1994 (Paper No. 34). A review of the file reveals that such Information Disclosure Statement was not considered by the Primary Examiner. It is not apparent from the record that the examiner notified applicant of whether this paper was considered and of whether their submission did not meet the criteria set forth in 37 C.F.R. §§ 1.97 and 1.98.

Also on April 28, 1994, the following papers were filed by applicant: (1) Declaration of Isidor Straus (Paper No. 33), (2) Reply Brief to Examiner's Answer [pursuant to 1.193] (Paper No. 32), and (3) Reply Brief Declaration of Dr. Mitchell Swartz

[1] Application for patent filed September 17, 1991.

(also numbered Paper No. 32). In response to the Reply Brief, the examiner entered a letter (Paper No. 35) dated May 13, 1994 indicating that the reply brief had been entered and considered. However, there is nothing in the record indicating that the examiner considered the appropriateness of items (1) and (3) above under 37 C.F.R. 1.195. Likewise, a Petition to the Commissioner Pursuant to 37 C.F.R. 1.181 (Paper No. 27) was filed January 7, 1994 and remains unanswered.

Accordingly, it is

ORDERED that the application is remanded to the examiner for consideration of the appropriateness of the Information Disclosure Statement, and it is

FURTHER ORDERED that the application is remanded to the examiner for consideration of the appropriateness of the Declaration of Isidor Straus (Paper No. 33) and the Reply Brief Declaration of Dr. Mitchell Swartz (Paper No. 32), and it is

FURTHER ORDERED that the application is remanded to the examiner for consideration of the Petition to the Commissioner Pursuant to 37 C.F.R. 1.181 (Paper No. 27).

A communication must be sent to applicant indicating the

Examiner's position with respect to all issues set forth above.

The application, by virtue of its "special" status, requires immediate action. See Manual of Patent Examining Procedure, § 708.01(d). It is important that the Board of Patent Appeals and Interferences be informed promptly of any action affecting the appeal.

BOARD OF PATENT APPEALS
AND INTERFERENCES

By: _____
AMALIA L. SANTIAGO
Program and Resources Administrator
(703) 308-9797

cc: MITCHELL R. SWARTZ
16 PEMBROKE ROAD
WESTON, MA 02193

RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 3641

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For: METHOD TO CONTROL REACTIONS
INVOLVING ISOTOPIC FUEL
WITHIN A MATERIAL USING
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Serial no. 09/ 748,691
Filed: 12/26/2000

This is a division of Serial no. 07/ 760,970
Filed: 09/17/1991

Group Art Unit: 3641
Examiner: Palabrica, R.J.

March 24, 2003

Commissioner of Patents and Trademarks
Washington, D.C. 20231

DECLARATION OF DR. MITCHELL SWARTZ

I, Mitchell R. Swartz, declare that I am a citizen of the United States of America and the inventor of the invention described in the above-entitled application.

1. I have a background in electrical engineering, material science, electrophysicist and electrochemistry and have worked in this field for more than a decade, and have worked on experimental projects at the Massachusetts Institute of Technology, Massachusetts General Hospital, and other locations going back to the late 1960's when I worked in MIT's Laboratory for Insulation Research, where barium titanate, a ferroelectric was made, and where samples of Apollo IX moon-rock were examined for their complex dielectric spectroscopic properties, from about 10^{-3} to 10^{8} Hertz, back in 1969.

2. The Office has many incorrect preconceived notions which have been proven wrong by Declarations and Exhibits. Rather than rebut my timely-submitted affiants and Exhibits, the Examiner, Dr. Rick Palabrica has ignored considerable portions of my submitted communications which rebut the Examiner's past disingenuous comments, and therefore has not used accuracy.

3. On March 10, 2003, I called the Examiner, Dr. Palabrica, and asked him, "How many Declarations are required to demonstrate utility (to those skilled-in-the-art)?". The Examiner would not give a number. The law reads that the answer is one (1). I have cited the law to the Examiner, but he has not responded substantively.

4. I asked the Examiner why he would not follow the normal standards of review? The Examiner stated that his refusal was based upon discussion he had with two supervisors, neither of which he would name, despite federal requirements reading under the doctrine of *respondeat superior* and normal custom.

5. The Examiner cites articles that have nothing to do with my work and nothing to do with my submissions of patent application or my publications which surmounted peer-review. For example, the Examiner disingenuously purports that my invention cannot heat water. This is utterly false. In addition to the previously supplied exhibits, attached are several graphs of devices which use the teaching of the above-entitled application (and others which I have submitted and which also have been targetted by the Examiner and the Office for apparent harassment). The Examiner inaccurately claims the system cannot heat a cup of "tea", but the tea would be of a scalding (very high) temperature if the system as taught in the above-entitled application was used, as shown in the attached graphs. The graphs show thermal spectrograms, as taught in '457 (another application of the Applicant) for a reactor containing a Palladium phusor, D_2O, platinum (anode) system. The input and output power, and energies, are shown. The step-like functions are the energy curves [to be read off the right had y-axis, which is labelled in joules]. The input and measured output powers (including the thermal background) are the remainder of the curves and have a logarithmic scale (left hand y-axis which is labelled in watts). The Phusors were electrically polarized using an electrical current source. Each figure demonstrates that the heavy water-Palladium phusor system was characterized by electrical power gain [excess heat] in greater amounts than that which occurred for the electrical resistor ("ohmic control"), which are also shown as controls in each figure. The signs of excess heat in these graphs include higher temperatures achieved for the same amount of input power, slowing

growing observed output energy compared to input (as opposed to the controls where the curves move in parallel), and more output power than electrical input power.

6. Mr. Palabrica disingenuously purports that I added new matter relating to patent '381. This is utterly unfair. First, the Examiner asked questions which directly led to the amendments. Second, the amendments were taken from, and consistent with and identical to, the original specification on this matter. Third, '381 is a divisional from the very same identical parent application (Serial no. 07/ 760,970, Filed: 09/17/1991) from which the present application is derived. Therefore, it cannot possibly be new matter. Furthermore, I have read that, "An original specification can also incorporate by reference subject matter disclosed in another patent application which is pending before the Patent Office and hence unavailable to the public." [In re JOLLES; United States Court of Customs and Patent Appeals, 1980, 628 F.2d, 1322; 206 USPQ 885].

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true.

Signature of Inventor:

March 24, 2003

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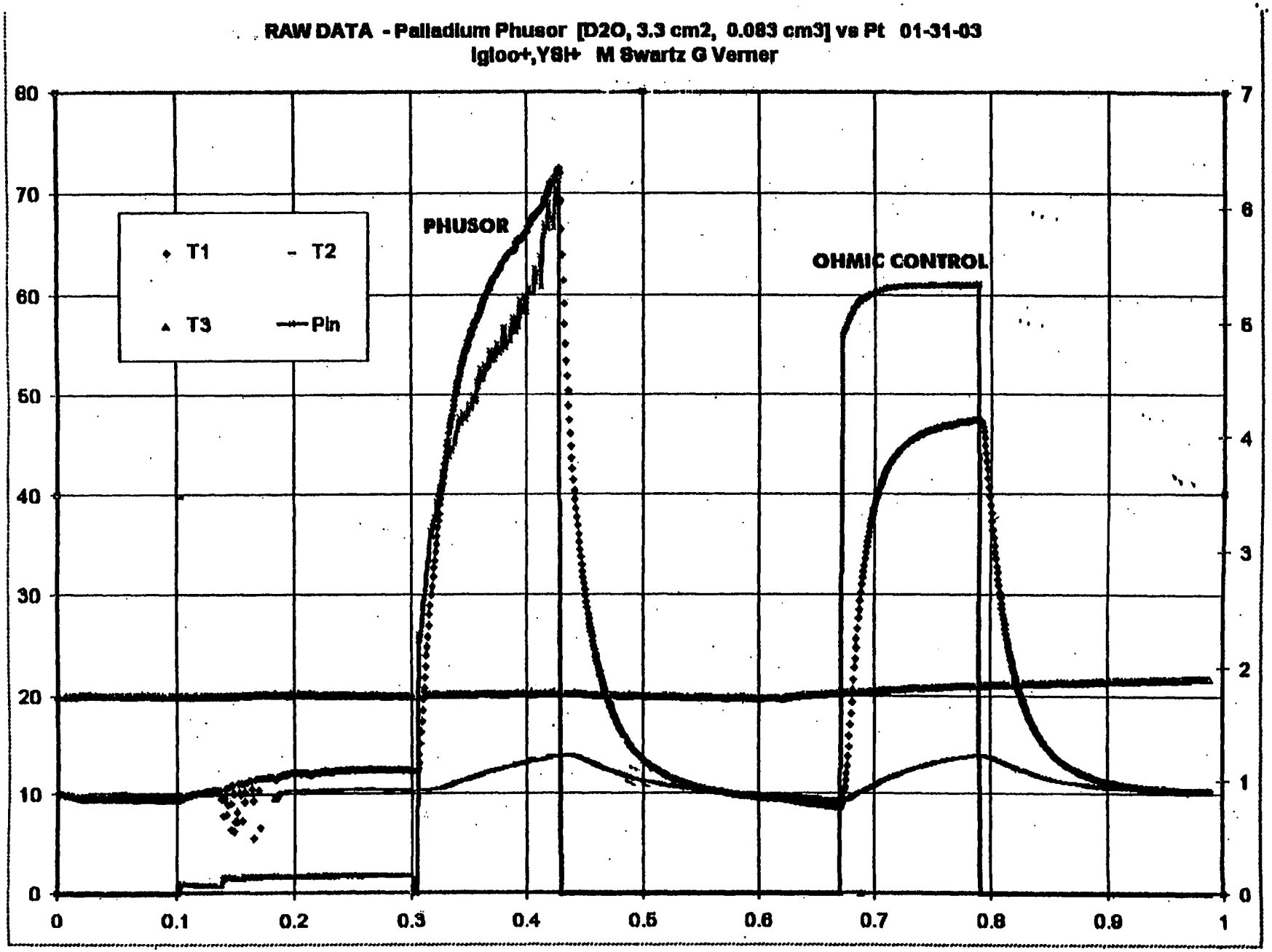
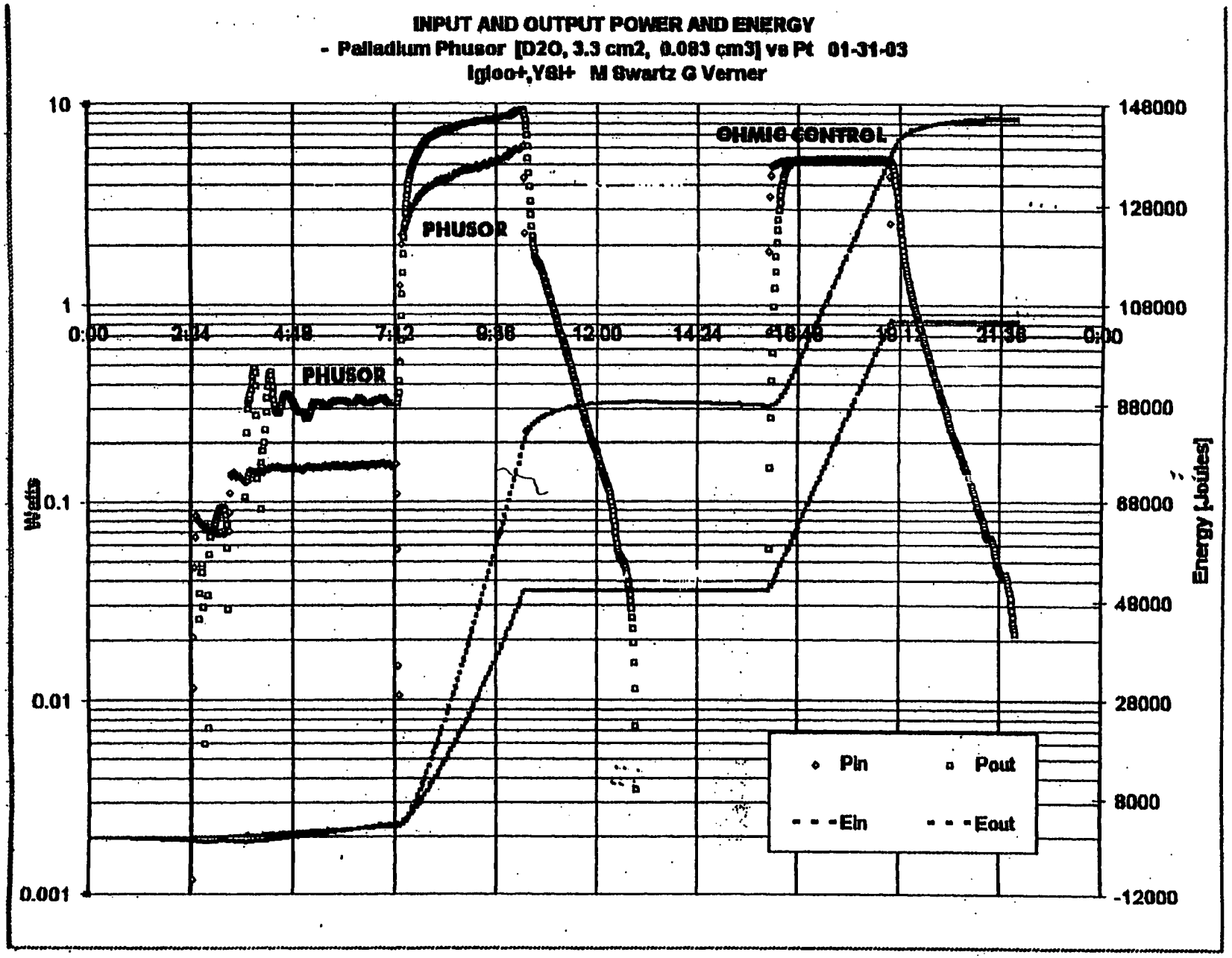
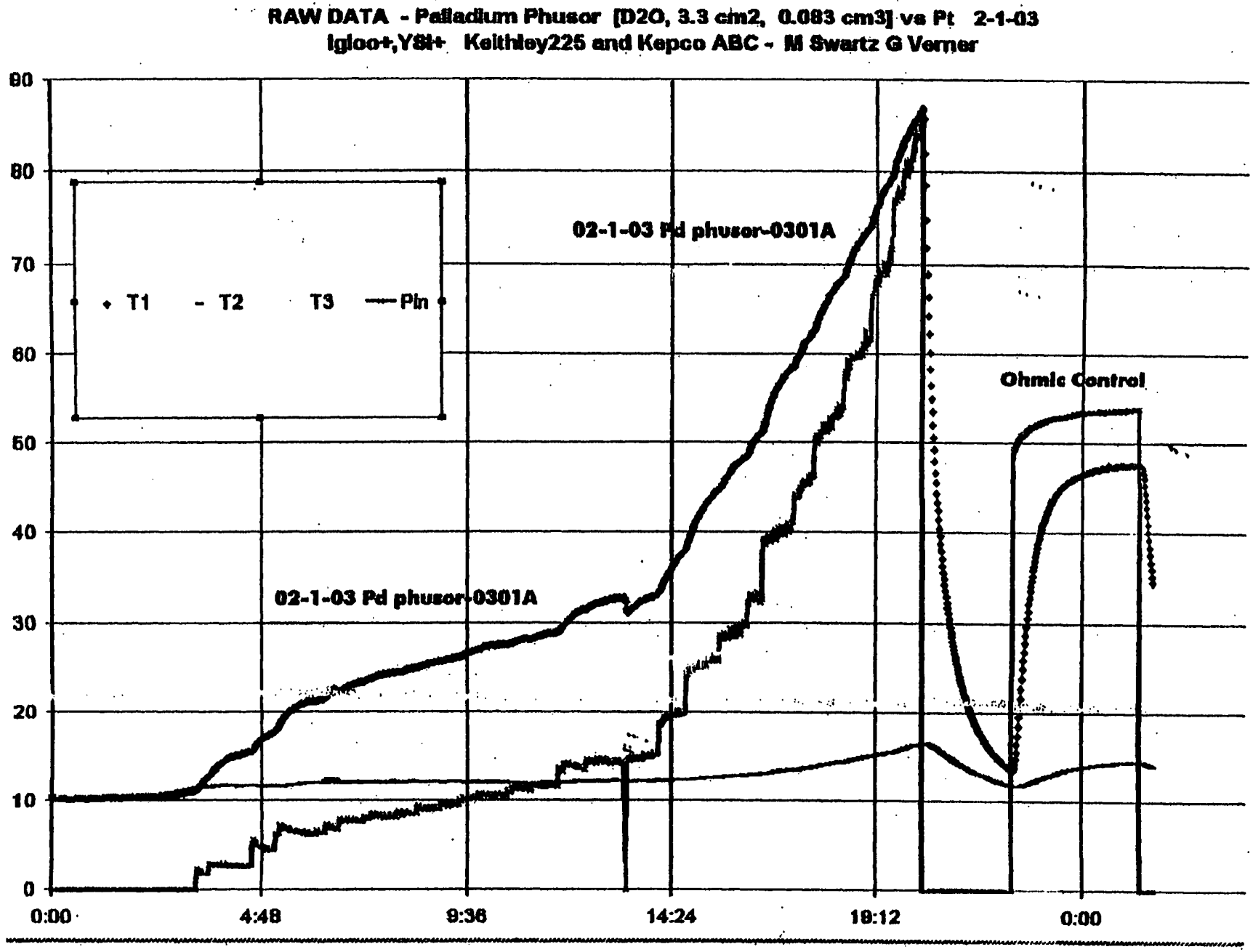
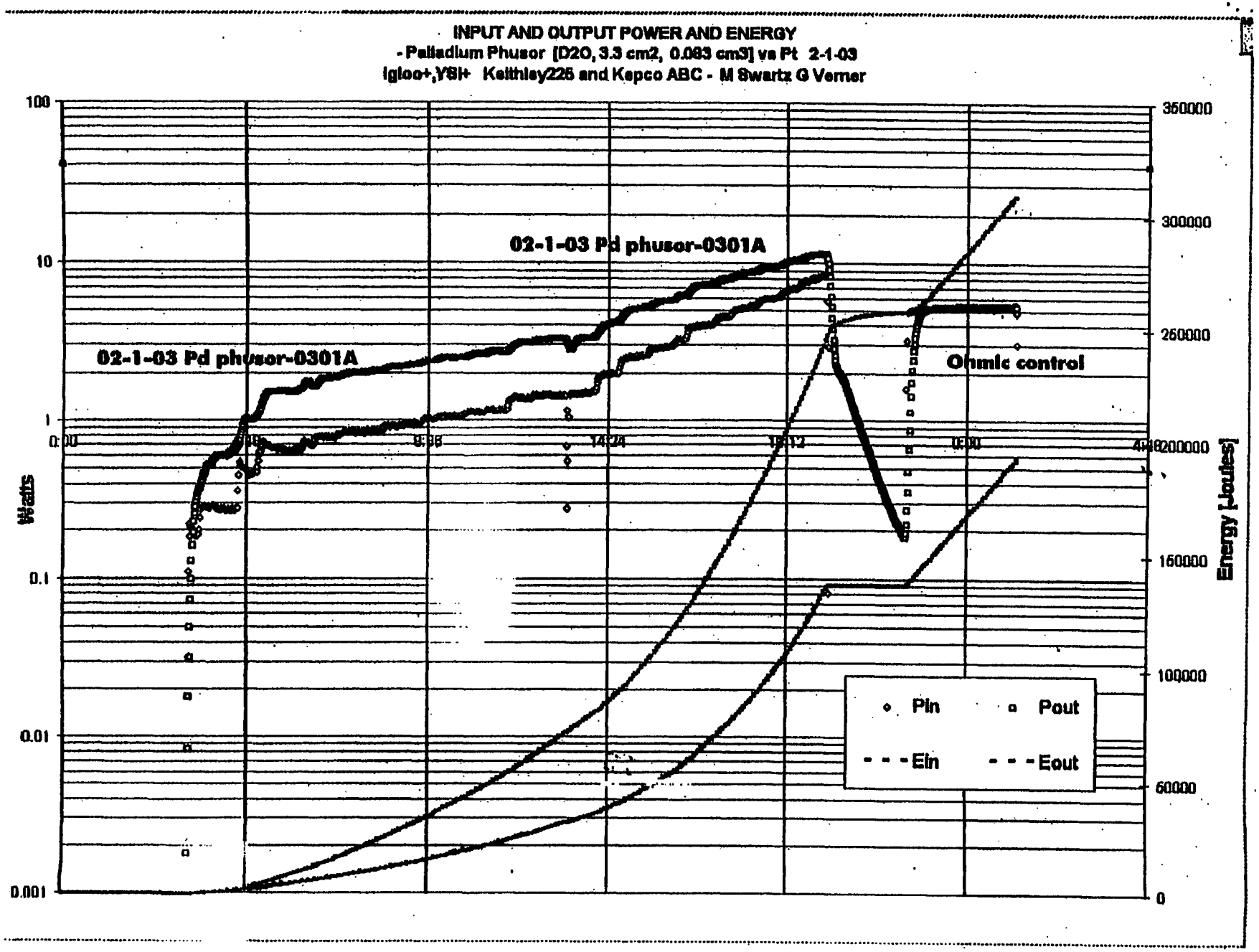
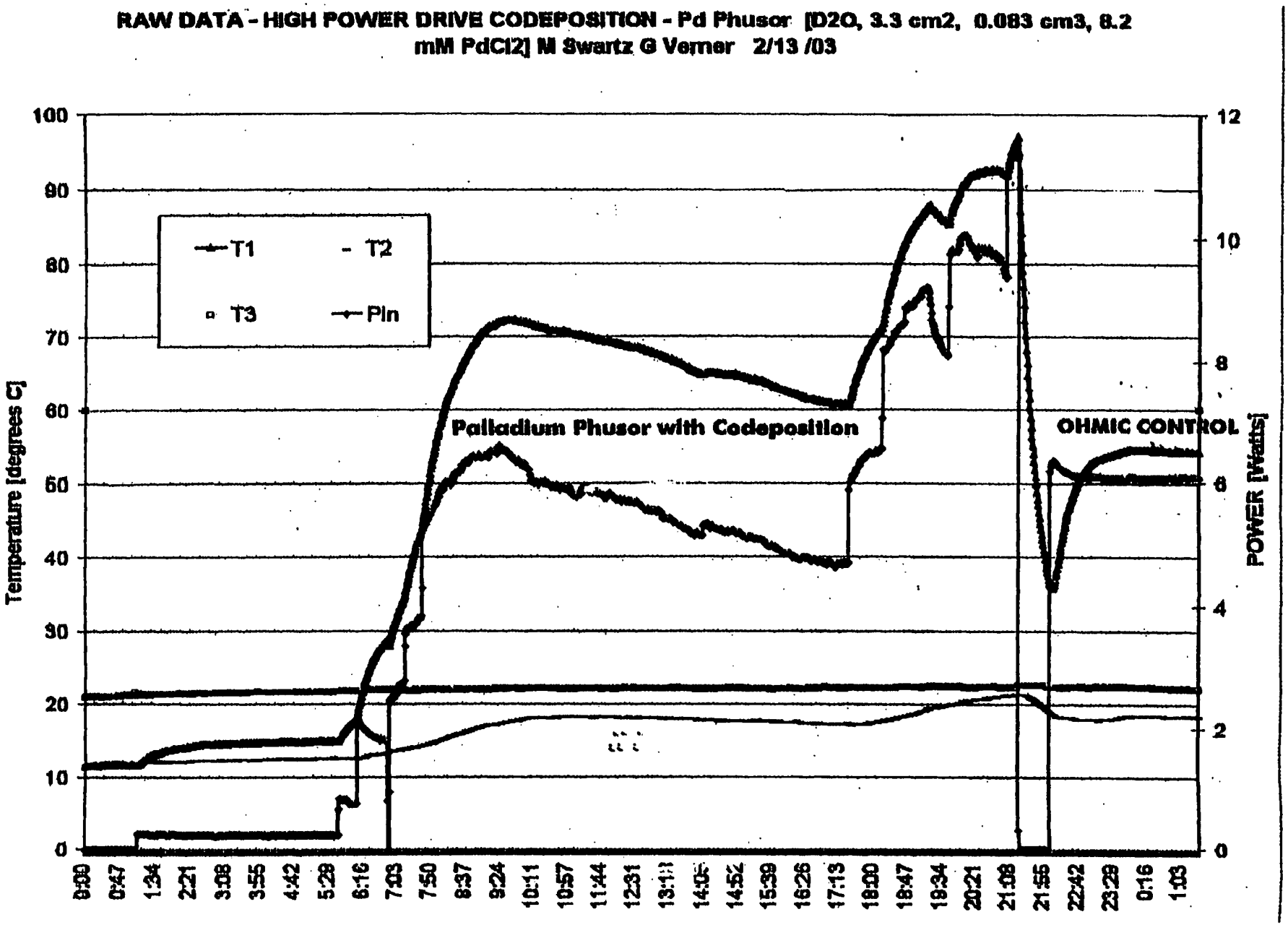
Post Office Box 81135
Wellesley Hills, Mass. 02481



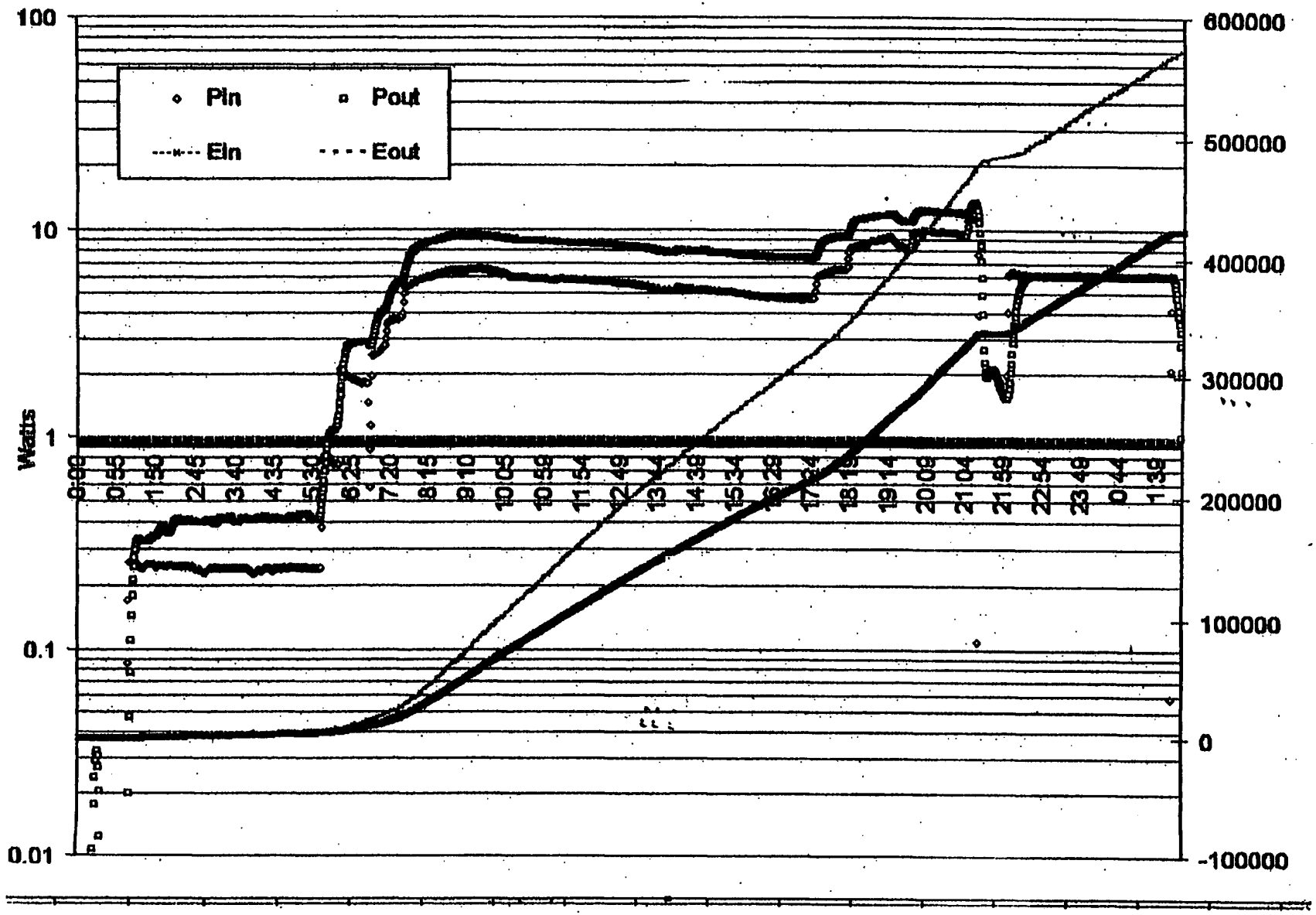








INPUT AND OUTPUT POWER AND ENERGY - CODEPOSITION - Pd Phusor [D2O, 3.3 cm2, 0.083 cm3] 8.2 mM PdCl2 M Swartz G Verner 2/12 /03



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For: METHOD TO INCREASE LOADING
OF ISOTOPIC FUEL INTO A METAL

Inventor : Mitchell R. Swartz
Serial no. 09/748,695
Filed: 12/26/2000

This is a division of Serial no. 07/ 760,970
Filed: 09/17/1991

PAPER:

Group Art Unit: 3641
Examiner: Palabrica, R.J.

March 16, 2003

Commissioner of Patents and Trademarks
Washington, D.C. 20231

DECLARATION OF DR. MITCHELL SWARTZ

I, Mitchell R. Swartz, declare that I am a citizen of the United States of America and the inventor of the invention described in the above-entitled application.

1. I have a background in electrical engineering, material science, electrophysicist and electrochemistry and have worked in this field for more than a decade, and have worked on experimental projects at the Massachusetts Institute of Technology, Massachusetts General Hospital, and other locations going back to the late 1960's when I worked in MIT's Laboratory for Insulation Research (where barium titanate, a ferroelectric was made, and where samples of Apollo IX moon-rock were examined for their complex dielectric spectroscopic properties (from about 10^{-3} to 10^{8} Hertz) back in 1969.

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I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true.

Signature of Inventor:

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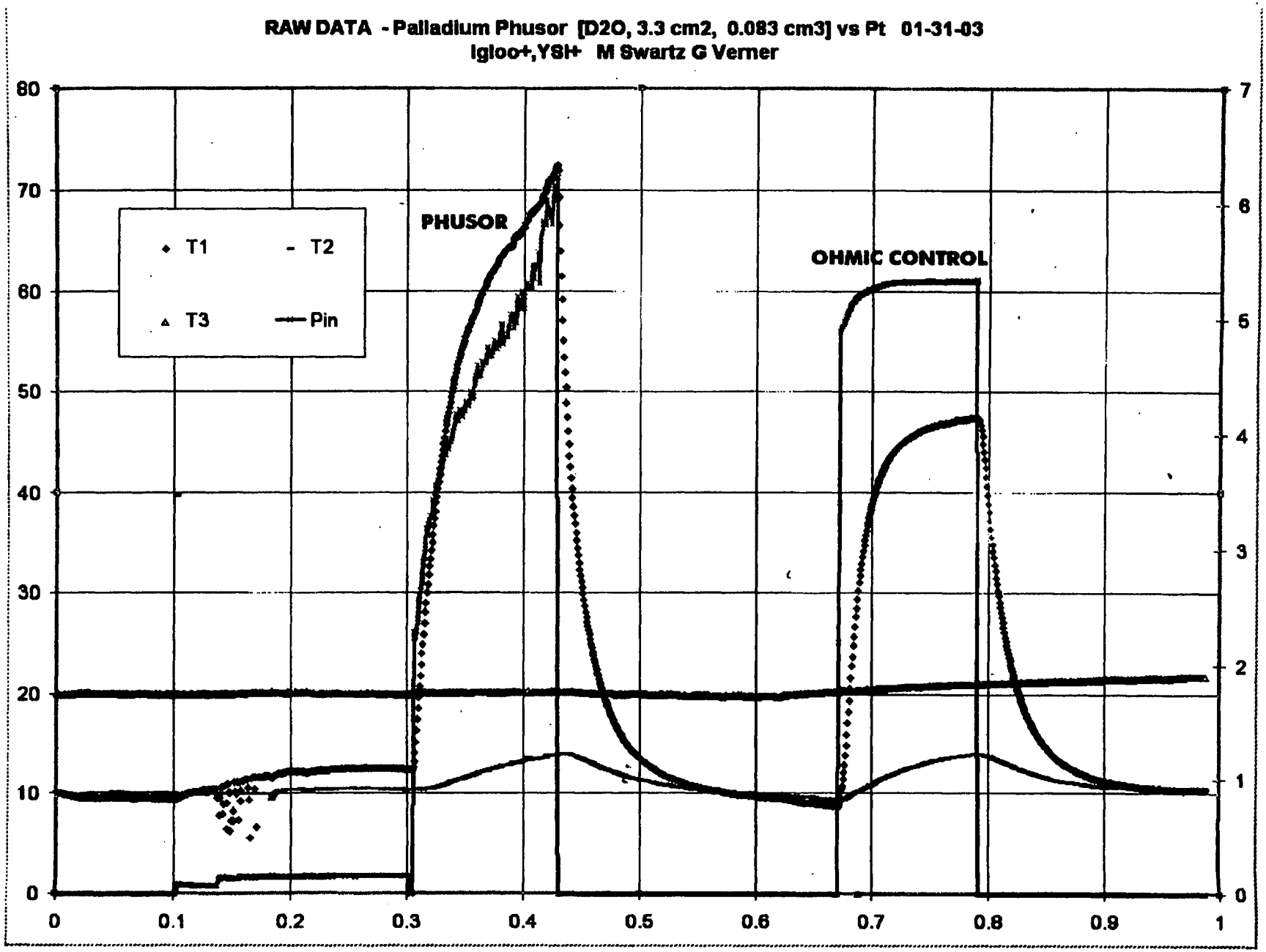

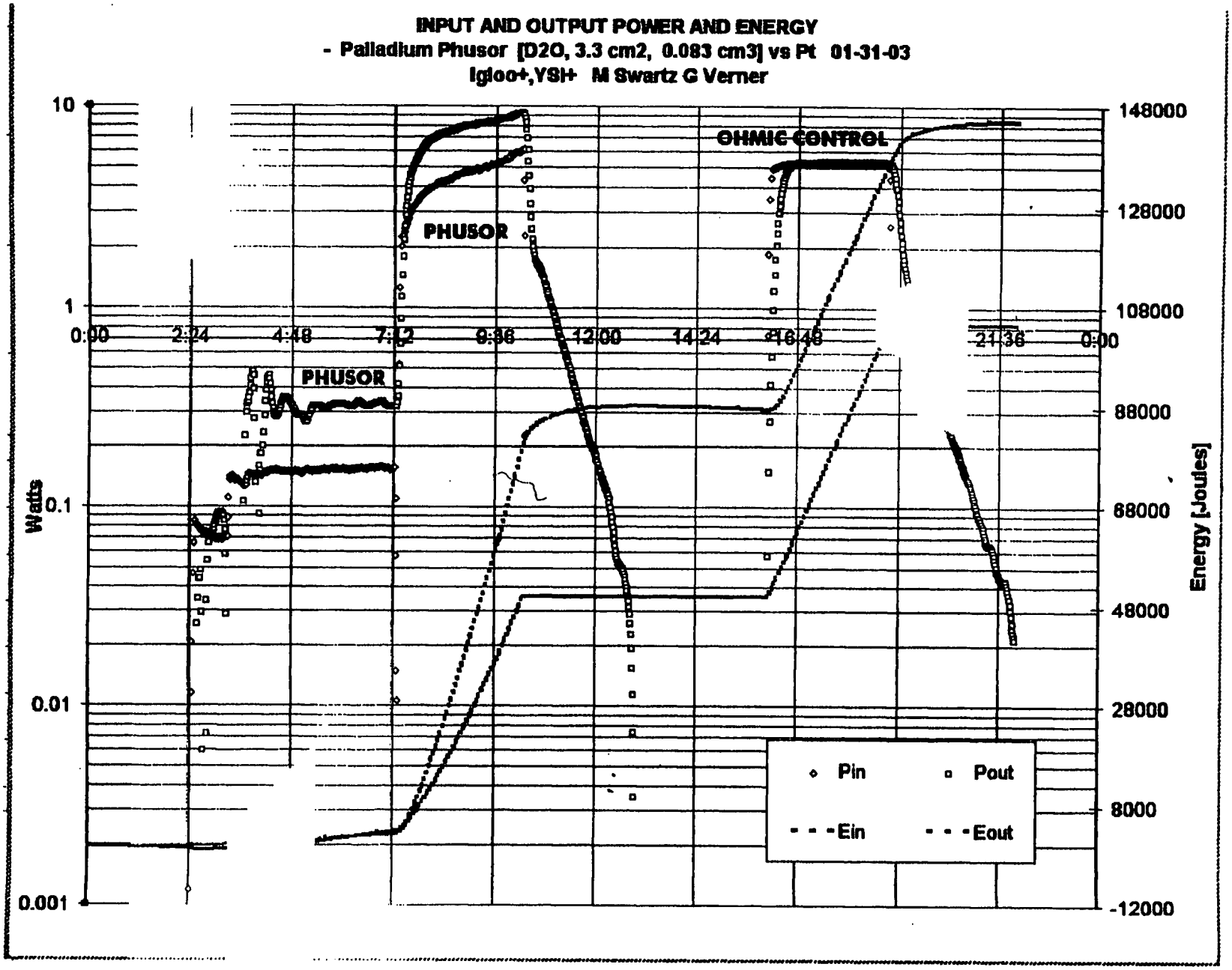

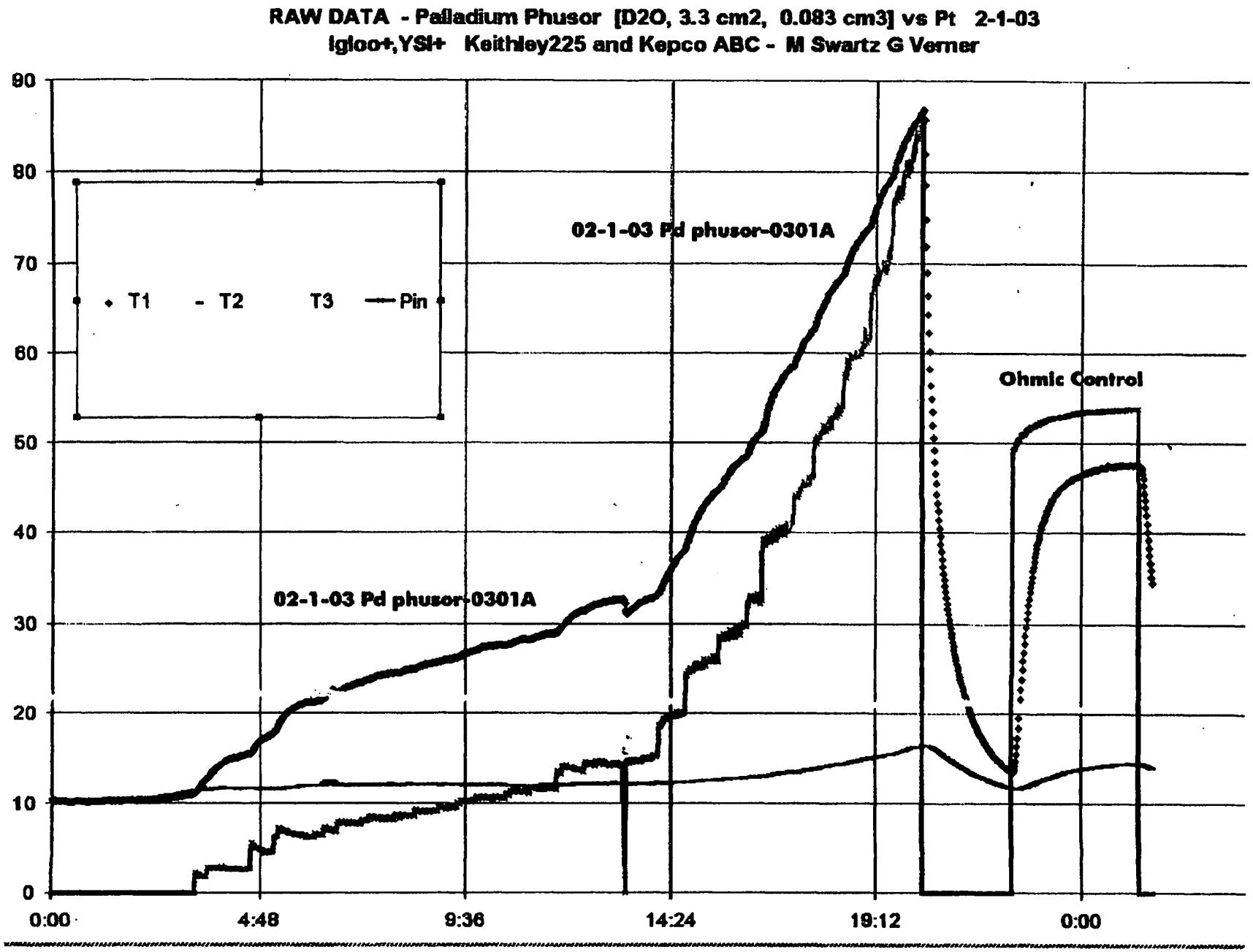

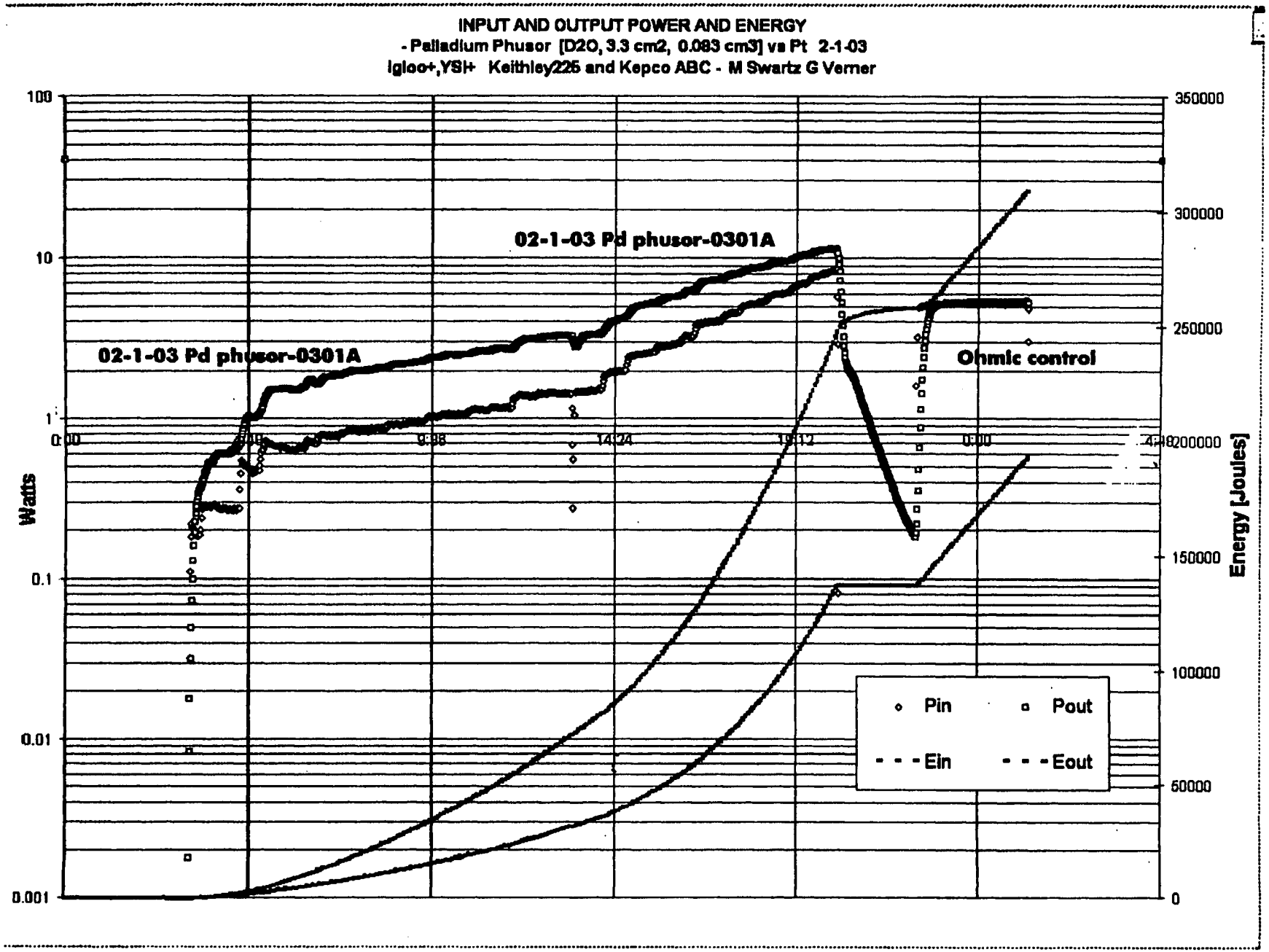

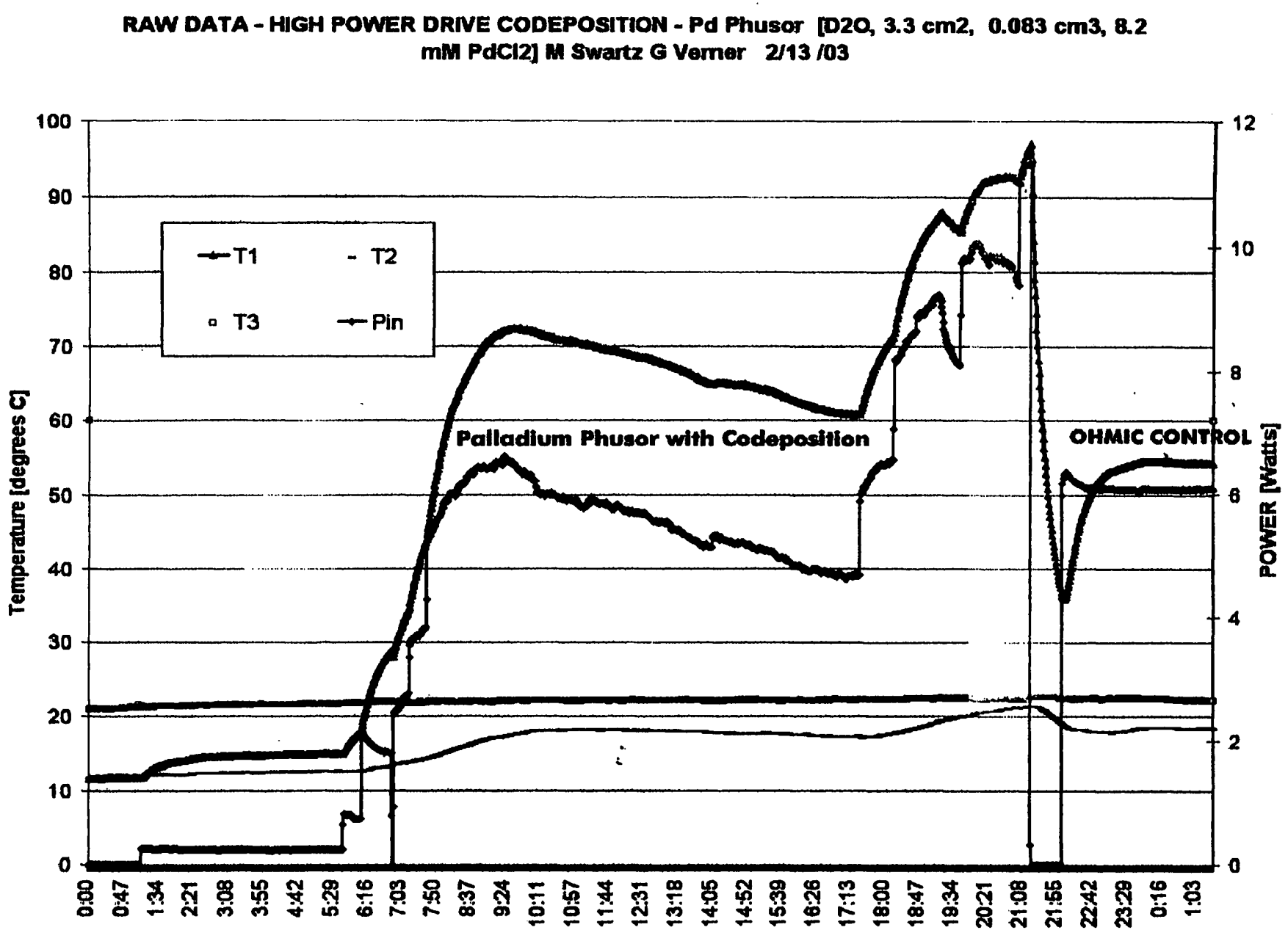

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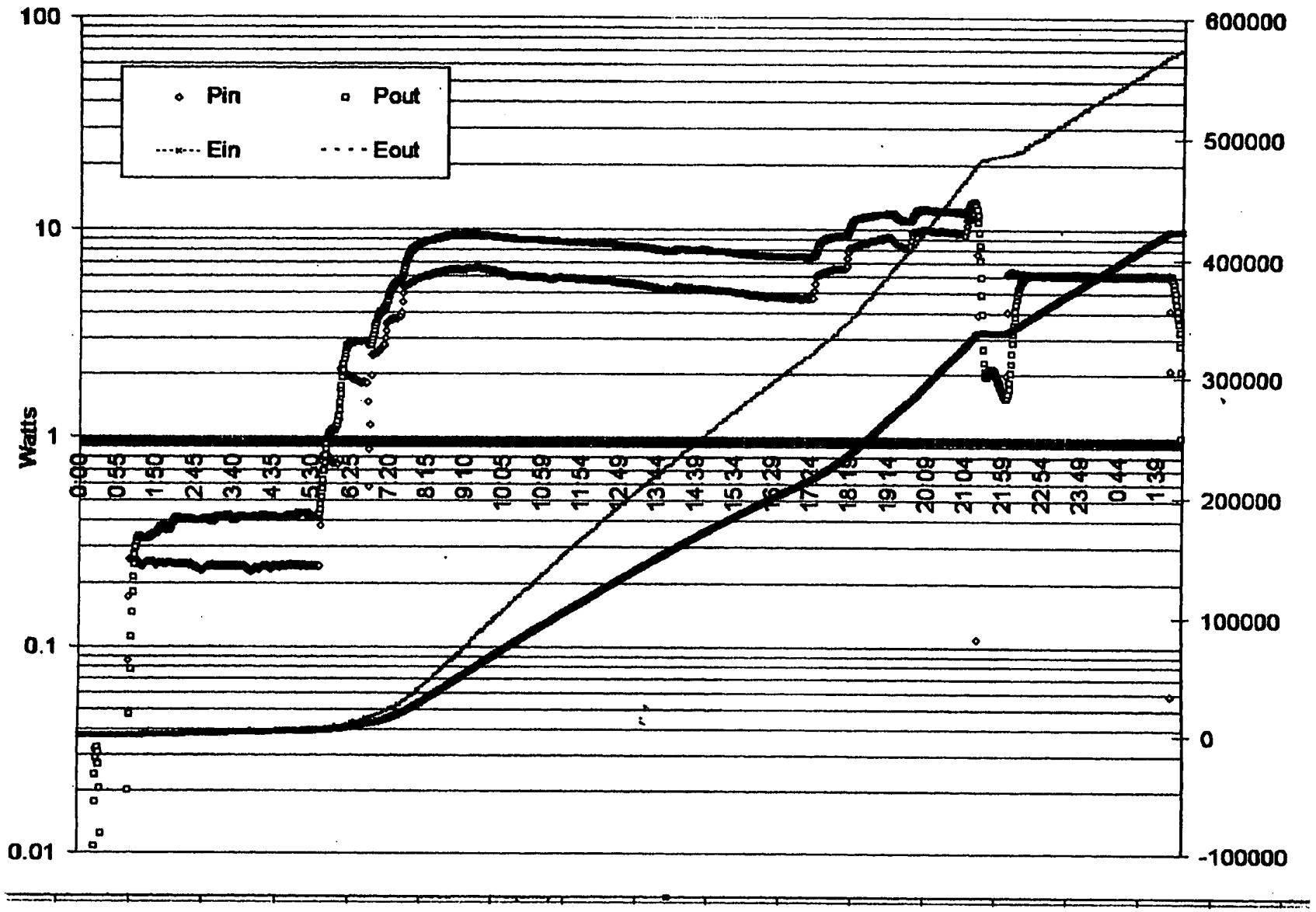

Journal of Scientific Exploration, Vol. 23, No. 4, pp. 0–0, 2009 0892-3310/09

SURVEY

Survey of the Observed Excess Energy and Emissions in Lattice Assisted Nuclear Reactions

MITCHELL R. SWARTZ
e-mail: mica@theworld.com

Abstract—Lattice assisted nuclear reactions (LANR) are real, and offer a clean, efficient potential new source of energy production. Two decades of LANR R&D have confirmed excess heat production, and other clearly nuclear phenomena, using electrolysis and other gas loading techniques. Requirements for success include incubation time, high loading of $>90\%$ PdD_x, and other requisite conditions difficult to achieve. Several types of LANR now exist, as well as LANR metamaterials, and several types of triggering and control methods. In LANR, excess heat and helium-4 are the usual products, but charged particles, tritium, and the sequelae of neutrons can be sometimes detected. Excess power gains up to 200–400%+ have been reported. Given the prevalence of the fuel, and the incredible efficiency, LANR could be an important revolutionary technology.

Keywords: palladium—excess heat—lattice assisted nuclear reactions—deuterium—deuterons—loading—flux—excess power gain—optimal operating point

1. Background: Brief Survey of Lattice Assisted Nuclear Reactions (LANR)

LANR [1–44] enable deuterium fusion. They are incredibly clean and free of pollution, all toxic emissions, all carbon footprints, all greenhouse gases, and radioactivity, while obviating fossil fuel. The deuterium is plentiful in the oceans. But the problem with this new technology is that the first published LANR reaction involved the 1989 Pons-Fleischman (Drs. Martin Fleischmann [Southampton, UK] and Stanley Pons [Utah]; P-F) experiment which was called "cold fusion" [1, 2]. Before that, the term was originally introduced by Benjamin Franklin for fulgurites, created by atmospheric lightning discharging into sand. Rather than agglomerating sand, LANR's core is quite different, involving a metal, like palladium, loaded fully with heavy hydrogen [45–51], obtained either from deuterons from heavy water or gaseous deuterium.

Cold fusion was widely, but not deeply, investigated in March 1989. P-F announced that the "electrochemical experiments" they had conducted had produced more energy ("excess energy") than could be accounted for, either by input energy or by available chemical reactions. They speculated that nuclear reactions

were involved. Attention was directed to cold fusion which savaged its messengers for global sensation and to benefit special interests. Was there a substantive basis for this attack? Fusion had not been explored, and was not known to occur, at low temperatures or in solids in a lattice. High energy theoretical physics never involved a lattice in the nuclear calculations. And yet, in favor of LANR, this was not the first time a lattice was involved with coupling to nuclear effects. Mossbauer effects [52–54] preceded cold fusion, as did other physics and engineering calculations which would eventually prove cold fusion is consistent with physics. Although the Mossbauer effect involves nuclear decay, it also shows a coherent momentum coupling to the lattice as a whole. The relevance to LANR is not the nuclear decay versus nuclear fusion, but the fact that the Mossbauer effect actually heralds one real existing case of nuclear lattice coupling. It is an example of a coherent linkage between the nuclei and electronic s-orbitals bathing them, coupling them to the entire solid state lattice. It demonstrates that the lattice is important in this branch of nuclear physics and must be considered, even if it was not previously.

In 1989, most efforts failed because of flawed paradigms, cracked inactive palladium cathodes, contamination (including from ordinary water), and most often, improper cell configurations, inadequate or questionable loadings, and incubation times. The patterns of failure have been many and have been discussed in detail elsewhere [1, 38], although in 1989 the physics community did not believe the initial P-F experiments since fusion was not known to occur at low temperatures or in solids. Today, the experimental facts rule. The initial failures, some which took years to understand, involved bad paradigms, questionable materials and loadings, but that is now resolved. Particle emission, excess energy, power gain, commensurate linked helium-4 production, increasing power gains and total energies achieved since 1989, all pave the way to an important, new, clean form of energy production: LANR.

Two decades of R&D, *sub rosa*, have investigated LANR phenomena ranging from excess heat production (far above the input), very low level but measurable emissions, thin films, and coupling to motors and electricity production systems. A few hundred credentialed scientists with diverse backgrounds continued to conduct careful experiments as they performed detailed data analyses using improved instrumentation, equipment, calibration, and controls. No single error or combination of errors on the part of all of the scientists can explain the developing results. They have been reported in over 3000 papers [55]. This paper will review a small, but worthwhile, fraction of the worldwide experimental work which saliently provides much compelling evidence that nuclear reactions can be assisted by a metallic lattice, PdD_x.

As will be discussed in Section 8, LANR (cold fusion) is consistent with conventional physics. The LANR-derived "excess energy" begins at high energy, in the excited state of helium, which is obtained from reactions between deuterons within the lattice. That helium-4 excited state is either the first excited state, or one energetically located above it, all at least 20 million electron volts (20 to $\sim 23^{+}$ MeV) above the ground level. This is significant in magnitude and clearly

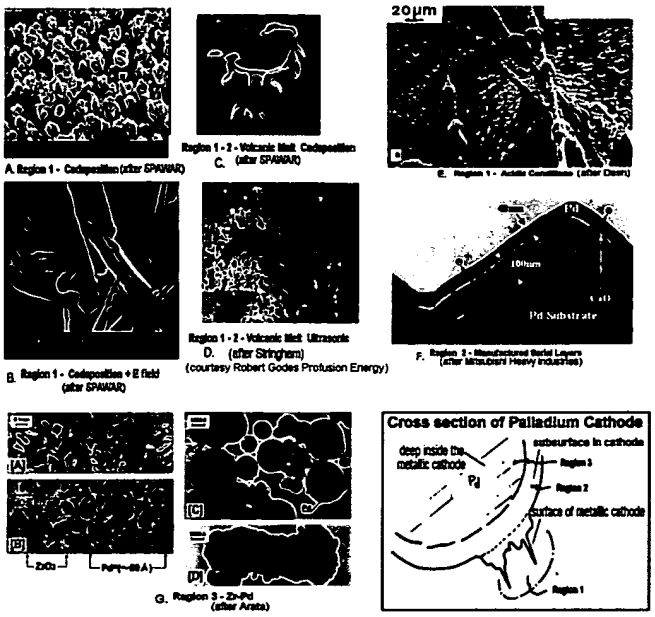

Fig. 1. Diversity of palladium LANR sites and nanostructures.

not "low energy", as often (mis)claimed. As such purported "low energy nuclear reactions (LENR)" are a misnomer, a paradoxical description of what is actually not observed. Furthermore, if these are low energy reactions, why even bother? Fortunately, they are high energy reactions.

Today, LANR research involves electrolytic (with solution resistance ranging from conventional to "high impedance" devices in the range of 200,000 ohms), gas loading, gas permeation, ion beam, and glow discharge loading techniques and devices. They run in both open and closed systems, at pressures up to 10,000 psi, and driving motors, with on-line monitoring, redundant, high precision, time-resolved semiquantitative calorimetry.

What has been learned? That LANR is real and generated in one of three different sites within the solid state, deuteron-loaded, metallic palladium lattice [42] (Figure 1). Each location has its own, differing, rate of excess heat, tritium, and helium production and appears to be linked to a different group of optimal operating point (OOP) manifolds characterizing active LANR samples and devices [39–44].

The fuel for LANR is the deuteron. It is driven into the metal by the applied electric field intensity or by gas pressure applied. In most cases, the product is an extraordinary amount of heat. Commensurate with the amount of excess heat is the "ash", usually *de novo* helium-4. The important point is that from those high energy levels of He^{4*} made in LANR come the observed excess energies in those difficult-to-achieve loaded lattice conditions, under some conditions.

These reactions are complex, and under some conditions, tritium and other emissions result. Some of the variety of regions involved both within, and upon, the metallic lattice is shown in Figure 1 [42]. Like hot fusion, the keys are containment, time, and density, but with flux substituted for temperature [1, 37, 43, 44, 56, for example]. This first key for LANR is that the PdDx alloy must be driven, usually electrically, to extremely high loading, until it is filled and almost bursting like a sponge with water. The electrode must accept and maintain high loading for excess heat ($>90\%$), for a sufficient incubation time, up to several hundred hours. Why? Vacancies must drift into the bulk from the surface, slightly facilitated by the loading itself [7, 56–58].

The additional keys for LANR are that there must be integrity of the loaded alloy; a condition difficult to achieve, although it is circumvented to some degree by the codeposition methods, albeit with their limitations [5, 7]. As the lattice loads, it swells. Too much swelling yields irreversible failure, just like a swollen, burst balloon. Another requirement is that deuteron flux must continue, within and through the already highly loaded lattice.

LANR success is rewarded by "excess heat", which means that the energy producing reactions have generated *de novo* helium into the lattice ($\sim 10^{12}$ for every watt-second), and those conditions were adequate to enable energy transfer to the lattice. LANR success also means that significant energy (think, $E = mc^2$ from the tiny difference between D_2 and He^4) is released rather than the low energy released by "burning" the deuterons into heavy water. There is more heat released than if the entire cathode were substituted for an equivalent quantity of TNT, but in this case it is safe, clean, and efficient.

2. Varieties of LANR

The LANR method which P-F first taught in March 1989 had problems, including inefficient reproducibility, and a requirement for very high loading with long incubation time. This created havoc for those inexperienced in metallurgy, electrochemistry, and physics. Today, briefly, there are several types of LANR; conventional (F-P), two types of codeposition (JET Energy, SPAWAR), dual cathode (Arata) systems, and a variety of other loading systems.

On one hand, development for high power has led to today's high electrical solution resistivity LANR systems (very low levels of electrolysis yield superior excess heat levels pioneered by JET Energy) and then LANR metamaterials (JET Energy [59]). Metamaterials use shapes engineered to control deuteron flux, even at equilibrium, and even after loading, such as shown in Figure 2. The Phusor® spiral cathode system, with its open helical cylindrical geometry, in a high electrical resistance solution, creates a unique and unusual electric field distribution [59]. There is an anomalous effect in those portions of the cathode closest to the anode. This results in both deuteron loading flux from the solution to the electrode, and intra-palladium deuteron flux [59].

This configuration is a new kind of $Pd/D_2O/Pt$ and $Pd/D_2O/Au$ engineered LANR structure with impressive energy gain and fairly good reproducibility [4, 7,

Fig. 2. Phusor LANR cathode in high electrical resistance solution. (Left) 2-D vector E-field distribution for two parallel, infinitely long, wire electrodes (anode at the top, and cathode wire). (Middle) 2-D vector E-field distribution for the wire-PHUSOR®-type LANR system. (Right) Close-up of cathode showing asymmetric bubbling. This heralds flux through the loaded metal, which differs from how others approach the problem.

10, 60]. These contain low paramagnetic content heavy water creating a unique, distinguishing electric field distribution quite different from customary wire-wire and plate-plate systems. LANR metamaterials, and high loading systems (included those explored by IENA, Energetics) and metallurgically engineered electrodes (NRL, SPAWAR, JET Energy), all point the way to high output powers and efficiencies.

On the other hand, codeposition LANR systems point the way to speedy onset for some of the reactions. Codeposition yields faster results without the prolonged incubation times. In codeposition systems, fresh Pd and D plate out together on the cathode. Highly expanded surfaces, nanoscale spherical nodules dominate on the growing surface. Cyclic voltammetry and galvanostatic pulsing experiments indicate, and excess heat measurements herald, that a high degree of deuterium loading (with an atomic ratio D/Pd $>$ 1) is obtained within seconds. The results to date indicate nuclear reactions which occur very near the surface of the electrode (within a few atomic layers). In the original JET Energy Pd/D codeposition process, working and counter electrodes are immersed in a solution of palladium solution with neither chloride nor lithium, deposited on palladium. In the SPAWAR Pd/D codeposition process, working and counter electrodes are immersed in a solution of palladium chloride and lithium chloride in deuterated water, deposited onto silver, gold, or copper. There are physical differences in the two types involving deep diffusion [5], where Pd is deposited either on palladium (like Dr. Swartz) or upon non-loading materials such as copper, gold, silver, or platinum (like SPAWAR).

SPAWAR and JET have investigated the physical changes, the excess heat generation, hot spots with calibration showing near- and far-infrared (IR) emission (Figure 3). JET Energy's and SPAWAR's (near- and medical IR imaging) have revealed that in LANR there are cathodic hot spots, and not just Joule heating in the solution (IR drop). The desired reactions producing excess energy

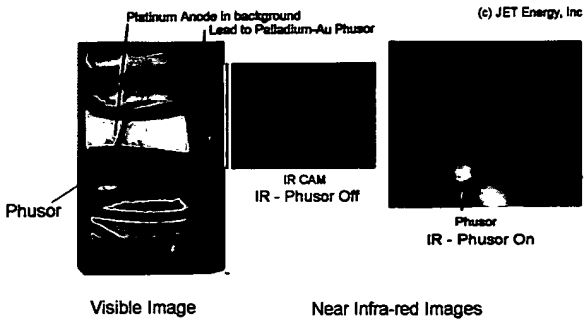

Fig. 3. Visible and near-IR images of a DAP Phusor® type LANR device in heavy water before and after activation.

yield localized hot spots (Szpak). The calibrated imaging of these localized hot spots, using an IR camera, reveal non-thermal near-IR emissions correlated with excess heat (Swartz) in active LANR devices by in situ monitoring [11] (Figure 3). This discovered non-thermal IR is linked, and specific, to the presence of excess heat production and not their physical temperature. This confirms the Swartz-Verner hypothesis that in LANR, unlike hot fusion, bremsstrahlung emission, under increasingly lower temperatures, shifts from penetrating ionizing radiation toward skin-depth-locked infrared radiation [61].

3. The Products of LANR

In LANR, excess heat and helium are the usual products, but charged particles, tritium, and the sequelae of neutrons can be sometimes detected. Excess heat and helium production are the dominant reactions. Melvin Miles of China Lake with Johnson-Matthey Pd rods was the first to show the correlation of heat and helium-4 production. Arata and Zhang reported *de novo* He^4 with LANR, including with Zr_2O_4/Pd powder exposed to deuterium gas, but not with hydrogen gas. Les Case ([28]; NH), using LANR with platinum group metals on carbon catalysts, reported He^4 production from deuterium gas. As a result of these findings, but ignoring the impact of the lattice for the moment, the reaction is something like

$$D + D \rightarrow He^4 + \sim 22 \text{ MeV (lattice)}$$

Energy and momentum are conserved in LANR [49, 62, 63], and because of the unique relationship to the lattice, the helium generated is moving slowly, at low velocity, very unlike hot fusion (discussed below). The He^4 which appears is retained in the cathode, until very high temperatures (~850C). The peak energy is consistent with the relatively low energy, but penetrating, ionizing radiation. Miles (China Lake, USN) and M. Srinivasan (Bhabha Atomic Research Center [BARC]) independently used dental x-ray films on the outside of this apparatus; they became fogged indicating low energy x-ray production.

In rare conditions, tritium production has been seen. In India, M. Srinivasan from BARC reported tritium in 1989. John Bockris (Texas A&M) reported tritium in bursts but the tritium was not accompanied by measurable heat, which he measured in other experiments. Szpak (SPAWAR) in open cells reported 3000 to 7000 atoms per second for a 24 hour period. Ed Storms (LANL) reported excess tritium in 10% of his cells.

Some experiments have detected very low number neutrons and charged particles with short range. M. Srinivasan (BARC) reported neutrons in 1989. As the current increased beyond 100 amperes, neutron signals, in bursts, resulted in 6 of 11 cells. X. Z. Li (Tsinghua U) first used CR-39 in his 1990 Pd gas loading experiments to detect energetic charged particles [64]. CR-39 is a polyallydiglycol carbonate polymer, widely used as a time-integrating, solid state, nuclear track detector. Larry Forsley (JWK International) and Mosier-Boss (SPAWAR) have reported D-D and D-T possible reaction pathways capable of generating the observed charged particles, neutrons, etc. Their CR-39 tracks indicate possible neutron interactions, including carbon shattering. Some tracks herald D-D and DT reactions. Etching suggests uniformity in the 2–8 MeV range. The triple tracks, found in ~5–10 of their experiments, indicate energetic neutrons having shattered a carbon atom. Also observed in LANR systems are post LANR mini-explosions, ionizing radiation, and neutron production, and tritium production. These observations of significant quantities of high energy charged particles, and emissions, in LANR systems, suggests that there is accumulating, near overwhelming, evidence that nuclear reactions in, and assisted by a lattice, are initiated at low energies.

4. Megajoules of Excess Energy

P-F reported excess energies of 4 megajoules in 80 hours. Similar amounts are seen in Figures 4 and 5. Several LANR devices show excess power gains from 25% to several times input electrical power, beyond the controls. High impedance LANR devices have shown power gains 200% to 400%, and one has yielded 8000% power gain for a short time. JET Energy has shown that some electrodes, of specific shape, are metamaterials which produces excess heat of a superlative magnitude, successfully driving Stirling engines at the 1–19+ watt level [3, 4, 6, 7, 39–41]. In 2003, JET demonstrated a working LANR high impedance PHUSOR-type LANR systems for 5 days at MIT at ICCF-10, producing ~230% excess energy at the 1–2 watt level.

Representative time histories (Figures 2 and 3) show both input and output electrical powers and energies. The input electrical power was switched manually between the LANR device and the resistor ("Control"). Integrated total energy for electrical input (solid red line) and thermal output (dashed blue line) are shown. The data marked by "PHUSOR" heralds electrical power supplied to it. The input electrical power is taken as V * I, so the excess heat measured was a lower limit to what occurred. An excess heat is induced at low power with a gain near 200%, after which the system is taken to higher input power, where the

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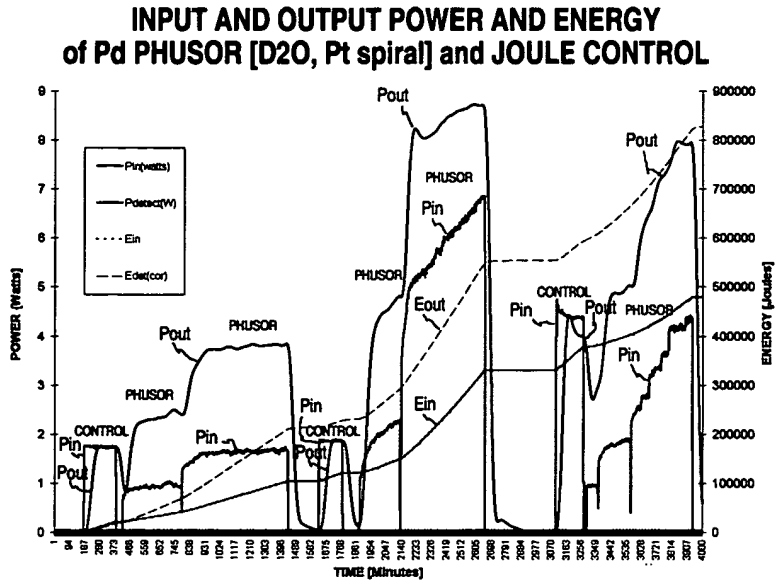

Fig. 4. Input electrical power (solid red line) and output thermal power (solid blue line) of a single ohmic calorimeter as a function of time.

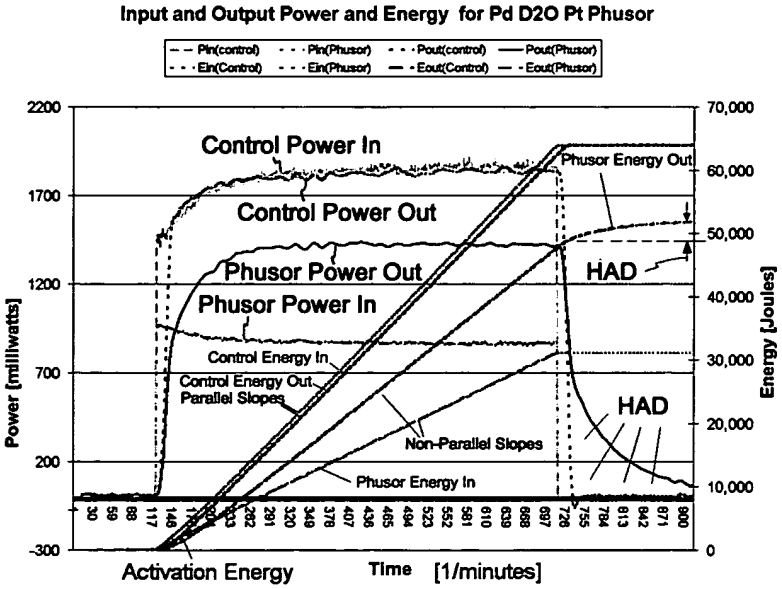

Fig. 5. Input electrical power (solid red line) and output thermal power (solid blue line) as a function of time for a Dual Ohmic Control (DOC) Calorimeter showing and activation energy, power gain, excess heat, and "heat after death" (HAD) which occurs after the termination of input electrical power.

power gain is lower, near 130%, followed by another calibration pulse. After this, the cell produces excess heat under varying conditions. The total input energy over 4000 minutes is illustrated by the solid red line, giving a result near 480 kJ. The total output energy over 4000 minutes is illustrated with the dashed blue line, giving a result of about 820 kJ. One observes in this run an energy gain of 1.7.

It can be seen in Figure 3 that the observed output power is much greater for the deuteron-loaded system as compared to the joule control and thus, there is excess heat. Two additional curves, the result of time-integration, on Figure 3 support the excess heat of the deuterium-loaded palladium system compared to the control. Figure 3 also has the integrated energy curves. It can be seen that for the ohmic joule (thermal) control the integrated energies of the input and output arise in parallel. By contrast, in the deuterium-loaded heavy water systems, there is an expanding gap which is not parallel but which increases over time, corroborating that there has been excess heat generated; more than 50,000 joules compared to the control.

The most important point is that even if one were to replace the entire cathode with TNT, one would only get 1.2 kilojoules on explosion. The excess energy observed with LANR is greater than any known chemical reaction. The second most important point is that the excess energy brings heat and changes wrought upon the electrode. SPAWAR, JWK, Stringham, Dash and others have reported volcano looking pits in electrodes. These induced pits are important for two reasons.

First, these features require a lot of local heat to produce the focal melting of the Pd, require substantial energy expenditure in order to form, again consistent with a nuclear source, not chemical. Second, SPAWAR [12, 20, 22, 23], Mitsubishi Industries (Japan) [37], George Miley (U of Illinois) [65], and others have shown elements appearing only at these unusual sites, which are consistent with nuclear, possibly even fission, products, some of which could not be extracted from cell components.

The heat diffuses away from the cathode, the site of LANR activity. Szpak, Mosier-Boss and Frank (SPAWAR) have shown that the temperature of the cathode is greater than the solution for codeposition. Swartz has shown how the temperatures change between anode and cathode as the OOP is reached. Modern calorimetry systems routinely employ calibration including thermal ohmic, metallic controls, and thermal waveform reconstruction. JET Energy measures the background noise, displaying it in "thermal power spectrograms" showing both input and output power, and energy by time-integration (Figures 4 and 5). These are supplemented calorimetry with up to five corroboratory measurements including heat flow measurements, electricity production, and paired, LANR-coupled Stirling motors.

5. Triggering LANR

There are two ways to control LANR—triggering and maintaining one OOP. Successful LANR requires critical control of input power, the OOPs of the driven

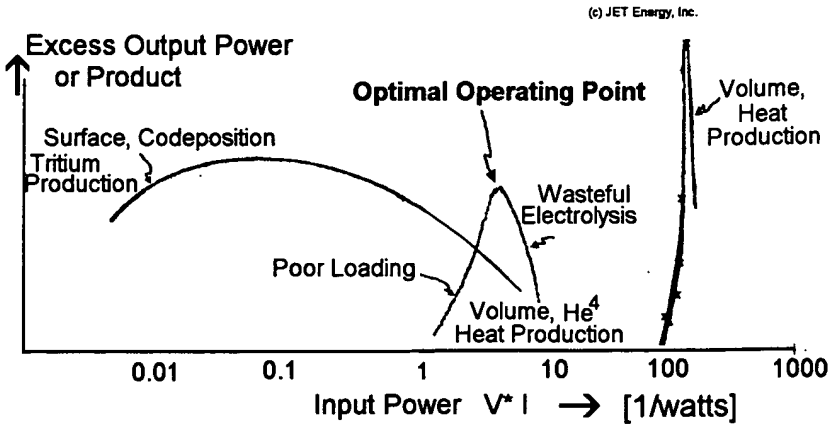

Fig. 6. Three LANR OOP manifolds.

systems, loading (>85–90%), and loading flux. Worse, the driving and loading fluxes needed for the reactions have a side effect. They can easily destroy a Pd specimen making it never work again. This occurs because there are complex metallurgical problems which involve swelling grain size and changing orientations, occurring at increased loadings, deforming the lattice. More than 1 gigapascal pressure produces stress, strain, cracks, deloading, and the usual "fatal" cracking.

JET Energy has examined the impact of laser irradiation on LANR cathodes, and reported in 2003 that part of the impact is due to reflection off of the cathode back into the double layer. There, deuteron injection into the palladium increases (activation energy of ~14 kilocalories per mole) from microwave rotation and IR vibration for the intermolecular transfer of deuterons to the Pd [10]. Hagelstein, Letts, and Cravens [29, 66] have reported both single and dual photon impacts on cathodes.

The important point is that several types of experiments have revealed that input energy levels of less than 10eV (involving the applied electric field, with or without additional visible light irradiation) can successfully stimulate production of excess heat of megajoules and, on occasion, stimulate nuclear by-products, including neutrons which have been detected at energies exceeding 12 MeV [23].

6. OOP LANR Operation

JET Energy reported that anomalous energy gain in metal deuterides became a more reproducible phenomenon as system operation was guided using continuum electromechanics. It revealed that there are narrow regions of optimal excess power generation, and peak helium-4 or tritium production, each when viewed as a function along the electrical input power axis (Figure 6). In Figure 6, the three

OOP manifolds show LANR systems response for excess power gain, *de novo* helium and tritium production, for several LANR systems, including codeposition and palladium-black nanomaterials. The peak of each of these relatively narrow biphasic functions is the OOP. The OOP peak is only one operating point at which the LANR system can be driven. The other possible operating points at which the system can be driven are not "optimal", but are within the OOP manifold.

OOPs are complex, often more than one, and they can change shape and size over time. During situations in which excess power is generated from an active LANR sample or device, large changes in LANR output, such as excess power gain, are observed as the input power is varied over a relatively small range. Over the years, the OOP approach to LANR has been quite successful (JET Energy [38–41]; JWK [67]; Innoventek [68]). The development of OOP technology has been one of our most useful assets in this research. Most importantly, OOP operation allows control and better understanding of LANR systems. For example, there are the corresponding matched peaks for heat production and helium production in the Pd-D2O system, in an entirely different regime for tritium production and Pd nanomaterials.

Second, OOP behavior is a general property of most, if not all, LANR systems. OOP manifolds appear to be universal, describing a large group of LANR systems and their generated excess heat, incremental helium-4, and tritium production. OOPs characterize output for heavy water helium production, for excess heat production from general LANR systems and devices, for high impedance LANR devices, for codeposition systems and codeposition PHUSOR LANR devices, for tritium generated from codeposition and "P-F"–type heavy water systems, and for excess heat and helium production in palladium-black systems (Figure 6).

Peak LANR performance occurs with production of heat and He^4, or tritium, at their two OOPs which exist at two different locations in electrical input power space. As a result, OOPs explain a vast set of experimental data, not otherwise explicable.

Third, when the data is thus organized, it formidably dispels any arguments that LANR research is not reproducible. Fourth, OOP operation enables researchers to "standardize" samples and devices, which has led to several discoveries, including those which only occur when the LANR sample or device is driven at the OOP (including maximizing and controlling "heat after death", the response to incident coherent optical radiation, and non-thermal near-IR emission).

7. Transmutations from LANR

The production of helium-4 *de novo*, making the excess heat, when a LANR device is driven at its OOP is a transmutation. Other transmutations do not produce heat, such as when tritium is produced. Iwamura (Japan, Mitsubishi Industries) reports transmutation by deuterium gas permeating through palladium which has barriers of cesium and calcium oxide. The cesium content drops, and praseodymium appears (also strontium to molybdenum). George Miley (U of

Illinois), John Dash (Portland State), Takahashi (Osaka U), Karabut (Russia), DeNinno (ENEA Rome), Claytor (LANL), Arata and Zhang (Osaka), and Stringham (HI) have all reported shifts in isotopic ratios, although most have not semiquantitatively corrected for electrophoretic mobility (ie electrodeposition).

8. Theories Involving Portions of LANR

It cannot be true that only one single "theory" will fit all the solid state, nuclear physics, and requisite electrical engineering. They involve a complex non-linear, time-variant system including an overloaded metal lattice, stirring with flux, and electrical currents involving both electrons and deuterons and their holes. In time, also formed are low dielectric constant layers appearing spontaneously in electrical series (bubbles). There are second order applied fields. This is in addition to the electric fields, magnetic fields, and electromagnetic fields including optical, terahertz, and other irradiations, which LANR experimentalists use, which result from the drifting electrons, deuterons, and their holes. The bottom line is that no one theory can ever cover it all. Instead, there are several, and they fit conventional physics quite well [31, 44, 56, 58, 62, 63, 69–74].

The quasi-one-dimensional (Q1D [39–44]) model of loading, based on continuum electromechanics, has led to the discoveries of OOPs and the key roles of D-flux, solution conductivity, and cathodic irradiation by laser in LANR systems. Recently, coupling this with Laplace's law has uncovered the need for deuteron flux within the palladium in an already highly loaded (D/Pd) LANR system. The Q1D models most important insight is that the first order D-flux equation, with the substitution of the Einstein relation, shows that the ability to load D depends on the ratio of ordering energy (the applied electric field) to thermal disorder ($k_B * T$) minus what goes up into the gas. The latter is perhaps most important because it reveals why so many have failed to generate successful LANR, because the name "fusion by electrolysis" is a misnomer.

How is fusion achieved? Are there "expected products"? In hot fusion without a lattice, the kinetic energy of 23.8 MeV charged particles (alphas) yields ionizations, Pd knock-off atoms, low energy X-rays, and heat. Secondary neutrons (by D[α,n]) have a small cross-section. Most physicists are more aware of the ionization and X-ray production of D + D impact physics without a lattice. In this hotter fusion, the products are fast moving helium (23.8 MeV α-particles) which yields 22 keV Pd K shell X-rays and bremsstrahlung below ~4 keV. Conventional bremsstrahlung is ionizing penetrating radiation well-associated with hot fusion. In D + D impact physics without a lattice, neutrons and charged particles (fast moving helium ions, α particles) are seen.

In summary, in hot fusion, the production ratios are about 50% neutrons with He^3, 50% tritium and a proton, and a tiny fraction (less than 1/1,000,000) as nuclear gamma rays. By incredible contrast, the production ratios observed for LANR reactions is mainly He^4, and negligible He^3, neutrons, and gammas of very low energies. Why is it different from hot fusion?

Historically, since1989, cold fusion was ignored, along with the scientific facts, generally speaking. The basic truth is that the temperature of cold fusion, lattice, and the nuclear isospin control which products are observed. The physics in LANR appears conventional, but band energies, lattice and isospin issues, and temperature dependences must be addressed. First, not all emission branches from the excited state of He^{4*} are even spin-available. The gamma emission branch from the excited state of He^{4*} is actually spin-forbidden for both hot and cold fusion [62, 63]. However, at higher hot fusion temperatures the restriction is lifted slightly. This is consistent to what is seen for both hot and cold fusion.

Second, the relative absence of neutron and hard gamma-ray penetrating radiation in cold fusion appears to be due to the lack of availability for two different, but thermally linked, reasons. The first thermally linked reason is that the only nuclear branches available are those whose band gaps are surmountable by the available activation energy (limited by the ambient temperature and incident radiation). The neutron emission branch is more than 1 MeV above the first excited state (He^{4*}). Hot fusion has large activation energies available (it is "hot"), whereas LANR (cold fusion) does not. In LANR, given the actual much smaller amount of thermal energy, $k_B * T$, available for cold fusion (~1/25 eV), absence of adequate activation energy decisively means that that branch is NOT available, as it is for hot fusion. Neutrons are not observed, helium production is in its stead.

The second thermally linked reason is that in the analysis for LANR, with the explicit incorporation of temperature into the bremsstrahlung equations, reveals that ionizing penetrating radiation by bremsstrahlung is not expected at low temperature. The bremsstrahlung shift (secondary to temperature and lattice availability) alters from what is expected at room temperature with the forward deposition of energy dropping by 18 orders of magnitude. Instead, at cold fusion temperatures, the penetrating ionizing radiation shifts to lower frequencies (to the near-IR) where the radiation is not longer ionizing, and where it is trapped in the palladium by the "skin-depth" effect. In fact, this shift to near-IR was later observed (and reported) in LANR devices when they were operated at their OOP. The result is non-thermal near-IR emission [11].

It is the lattice which is key to the final products. It controls the de-excitations to produce He^4 in the ground state if there is coupling to though phonons. In hot fusion, the lattice—and therefore the coupling—are not there. In LANR/cold fusion, the fast moving He^4 (as charged particles, alphas) are not seen because the phonons, each about 35–43 millieV, help the He^{4*} state shed ~20+ MeV to return to the He^4 ground state [7, 38, 57, 58, 71]. However, in a coherent lattice, there are enough phonons to enable transfer in the nanoseconds required. Hence the "excess heat". Ergo, it is the lattice that opens up the new pathway. The many-spin, spin boson model [58, 61] has led to discoveries of how exchange energy between oscillator quanta enables coherent energy exchange. One *sine qua non* is that there be enough phonons (lattice vibrations) [7, 38, 57, 58, 71, 75]. If they act coherently, and if there are enough Frenkel defects, then the lattice appears to be

"oiled" enough for coherent energy transfer (this is from where the excess heat arises) from the very high energy nuclear state consisting of the nuclear helium excited state to the lattice [7, 58, 62, 70]. This unusual coupling in LANR, occurring from nuclear states to the lattice, is rare, requiring s-orbital interactions. It was first seen in momentum transfer to lattices (Mossbauer-type) experiments.

Other theories which improve nuclear state-lattice interactions are those involving Bose-Einstein condensates, poly neutrons clusters, and loosely coupled oscillators; each give a view to electron screening, an important physical factor in metals, astrophysics, and LANR. The catastrophic active media [56] theory models the unusual change in deuteron solubility that Pd demonstrates with temperature.

9. Advanced LANR Technology—Revolutionary Apps Just Around the Corner?

LANR could become the energy multiplier saving the planet. The energy density of LANR reactions is 10 million times that of gasoline. The fuel is heavy water, obtainable from the sea which is already one part in 6000 a heavy hydrogen. Given the prevalence of the fuel, and the incredible efficiency, LANR could play a critical role in all future technologies with potential revolutionary applications to all energy issues—robotics, transportation, electricity production, space travel. Larger LANR power devices will fit into a hybrid car and offer methods to power in vivo medical devices such as the artificial heart. JET Energy, Inc. has already reported on thermal and efficiency issues of the electrical feedback loop, and has connected the excess heat to Stirling engines.

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electrophotochemotherapy for treating human tumors and infectious organisms, and sensors using composites of biomaterials and semiconductors. Research continues on medical inventions, unusual dielectrics and poled ferroelectrics, and lattice assisted nuclear materials and devices to be used for propulsion, electricity production, and artificial internal organs.

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